DART AEROSPACE

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO24706

Purchase Order Date 6/20/2014
PO Print Date 6/20/2014

Order From : VU-BEA001

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REVISED

Contact Name		**Buyer**	Chantal Lavoie
Vendor Phone	305-925-2600	**Customer POID**	
		Customer Tax #	10127-2607
Ship To Contact		**Terms**	Net 30
Ship To Phone		**Currency**	USD
Ship Via:	FedEx PI collect	**FOB**	FCA – (Free Carrier)
Ship Acct:			

FAXED

M129 590

Line Nbr	Reference / Vendor Part Number / Line Comments / Delivery Comments	Description/ Mfg ID	Req Date/ Taxable / Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	AN3-6	Bolt	6/23/2014 Yes 6/23/2014		50.00 Each	$0.55	$27.50
						Line Total:	**$27.50**
2	AN4-16A	Bolt	6/23/2014 Yes 6/23/2014	FN	100.00 Each	$0.40	$40.00
						Line Total:	**$40.00**
4	MS21250-06022	BOLT	6/23/2014 Yes 6/23/2014		70.00 Each	$4.70	$329.00

cP

343

P 14/6/23

Note:

6/20/2014

DART AEROSPACE

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO24706**

Purchase Order Date 6/20/2014
PO Print Date 6/20/2014

Order From : VU-BEA001

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name		**Buyer**	Chantal Lavoie
Vendor Phone	305-925-2600	**Customer POID**	
		Customer Tax #	10127-2607
Ship To Contact		**Terms**	Net 30
Ship To Phone		**Currency**	USD
Ship Via:	FedEx PI collect	**FOB**	FCA – (Free Carrier)
Ship Acct:			

Line Total: **$329.00**

5	AN893-3D	REDUCER	6/23/2014 No 6/23/2014	6.00 Each	$7.50	$45.00

Line Total: **$45.00**

6	AN924-12J	NUT	6/23/2014 No 6/23/2014	6.00 Each	$7.50	$45.00

Line Total: **$45.00**

7	AT283-14	NUT RING	6/23/2014 No 6/23/2014	5.00 Each	$5.00	$25.00

Line Total: **$25.00**

Note:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO24706**

Purchase Order Date 6/20/2014
PO Print Date 6/20/2014

Order From : VU-BEA001

B/E AEROSPACE INC
88289 EXPEDITE WAY
CHICAGO, IL 33172
USA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 305-925-2600

Ship To Contact
Ship To Phone
Ship Via: FedEx PI collect
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA – (Free Carrier)

8	MS21061LO8K	NUT PLATE	6/23/2014 No 6/23/2014	12.00 Each	$1.50	$18.00
				Line Total:		**$18.00**
10	MS35489-46	GROMMET	6/23/2014 No 6/23/2014	50.00 Each	$0.65	$32.50
				Line Total:		**$32.50**
11	MS27194-16	GASKET	6/23/2014 No 6/23/2014	9.00 Each	$4.36	$39.24
				Line Total:		**$39.24**

Note:

HK FITTINGS
A Fitting Partner

2979 N. Ontario St.
Burbank, Ca. 91504
Tel: (818) 841-6004
Fax: (818) 841-1793

PACKING SLIP

Invoice 114034
Invoice Date 08/23/01

Ship To:

HONEYWELL HPG-TRISTAR
700 HENRIETTA CREEK RD.
ROANOKE, TX 76262-6398

Date	Ship Via	F.O.B.	Invoice	SalesPerson	Customer
08/23/01	UPS 5 @ 107#	Origin	114034		TR400

Terms	Purchase Order Number	Order Date	Our Order Number
NET 30 DAYS	C1774	08/17/01	71930

Quantity Ordered	Quantity Shipped	Back Order	Item Number / Description
550	550		AN893-3D #14787 HK C/P
2500	2500		AN800-3 #13636 HK C/P
5000	0	5000	AN800-3 due 1/5/02 C/P
750	525	225	AN815-8 #14563 HK C/P

MCC

HONEYWELL 320 HPG

RMA # REQUIRED ON ALL RETURNS.

ALL CLAIMS FOR ERROR, SHORTAGE, DAMAGE MUST BE MADE WITHIN 7 DAYS AFTER RECEIPT OF GOODS.

We hereby certify that these goods were produced in compliance with all applicable requirements of Section 6, 7 & 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof.

We certify that the material furnished on this order conforms in all respects to the current applicable government and/or manufactures specifications. Material subject to inspection at destination.

By [signature]

CUSTOMER

B/E AEROSPACE, INC.
CONSUMABLES MANAGEMENT
PO BOX 025263
MIAMI, FL 33102
PHONE: 3059252600
FAX: 3055077192

MINOR RUBBER

49 Ackerman St, Bloomfield NJ 07003
Tel (973) 338-6800 Fax (973) 893-1399

PACKING SLIP

SHIP TO

B/E AEROSPACE INC
CONSUMABLES MANAGEMENT
9835 NW 14TH ST
MIAMI, FL 33172
PHONE: FAX:

CUSTOMER PO# OSWF37

PACKING SLIP# 399567

MINOR RUBBER ORDER# 216852

PICK LINE#	CUSTOMER LINE#	CUSTOMER SCHED#	MINOR RUBBER SUB#	MINOR RUBBER LINE#	IC	QTY
1	1	1	0	2	1305 / 0	500 / EA

PART # MS35489-46
DWG-REV-EC MS35489-K

BUNA-N **50** **BLACK**

Country USA **Catalog:** MS-35489-46

Lot# 60743 **Cure Date** December 2013

CERTIFICATION OF COMPLIANCE

This is to certify that the item(s) stated in this packing list were produced in accordance with the requirements of the above referenced purchase order, subject to any exeptions, modifications or limitations as may have been stated in our quotation and/ or purchase order acknowlegement; one or both of which were previously provided.

[signature]

President

LOT# 60743 QTY: 500 EA.
CURE DATE: 4Q/2013

January 15, 2014.

B/E AEROSPACE

B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
4	70	EA	MS21250-06022		316653	3V FASTENERS	1ER65		

06/20/14

Jason Lewis
Vice President of Quality

Inv # 06/20/14

3-V FASTENER CO., INC.

3-V Fastener Co., Inc.
320 Reed Circle
Corona, CA 92879
Tel: 951-734-4391
Fax: 951-734-0127
www.3VFasteners.com

PACKING LIST

SHIPPED TO:
B/E AEROSPACE
9835 NW 14TH STREET
MIAMI FL 33172

CUSTOMER	OUR ORDER NO.	PICK SLIP NO.	YOUR ORDER NO.	DATE PRINTED
141327	118082	1879123	0RKH90	03/21/2014

1.000	MS21250-06022 Rev. 1	N/A	316653		5,000
		5,000			

Receiving Report

Date: 14/4/23 Batch No: M129590

Supplier: B/E Dart P/O: 24760

Packing Slip: Yes ✓ No ___
Invoice: Yes ___ No ✓
Receipt: Cash ___ Cr ✓
New Supplier Yes ___ No ✓

Release Note Attached: Yes ✓ ~~No~~ ___ N/A ___
Waybill Attached: Yes ___ ~~No~~ ✓
Shipment Complete: Yes ✓ ~~No~~ ___ N/A ___
QC18 Inspection ___ N/A ✓
Work Order ___ N/A ✓

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Rec'd	Quantity Short	Quantity Inspected	Quantity Rejected	Comment / NCR Number

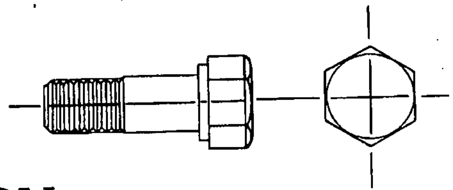
Initials of Receiver QC12 [signature]

Location CA

Production/Admin:
Date
Received/Costing ___
Initial ___

H:\FORMS\Purchasing\approved purch\RECREPORT Rev F

3V® FASTENERS
PRECISION AEROSPACE FASTENERS
a CAM™ Company
320 Reed Circle • Corona, CA 92879
Tel: 951-734-4391 • FAX: 951-734-9488



TEST CERTIFICATION

Cert # : 64967 Cert Date: 03/21/13

LOT #: 316653
MFG DATE:9-6-13

Cust # : 141327

P.O. #: ORKH90

Customer : B/E AEROSPACE

P.O. Qty: 5000

Ship To : MIAMI, FL

Ship #: 1879123
Ship Qty: 5000

Part #: MS21250-06022

MFG. Part #: NASM21250-06022 REV.1

Material Spec: AMS6322N
Type: 8740
Code: 14207

Heat #: 10175090
Mill, Vendor: CHARTER STEEL / WIRETECH
Procure Spec: NASM8831 REV.4

Shear per NASM1312-13 or -20
Minimum Requirement: 23900 LBS

Load	Load	Load	Load	Load
24885	24973	25026	25412	24990
24990	24738	24779	25216	25276

Hardness per NASM1312-6, ASTM E 18 or E 384
Minimum Requirement: 39-43 HRC

41.0	41.0	41.0	41.0	42.0
42.0	42.0	42.0	42.0	42.0
42.0	42.0	42.0	42.0	43.0

Metallurgical Tests
Hardness: N/A

Grain Size: N/A Decarb: NONE

Metallurgical, Special Process and Subcontracted Test Information
THREADS INSPECTED PER MIL-S-8879C N.3, AS8879D OR MIL-S-7742D
MACRO AND MICROSTRUCTURE SATISFACTORY 3 PCS
HEAT TREAT PER AMS2759/1E BY QUALITY HEAT TREAT #134831
CAD PER AMS-QQ-P-416C TYII CL.2 BY ACTIVE #136279
100% MAG PER ASTM E 1444/E1444M-12 BY ACTIVE #136571
HYDROGEN EMBRITTLEMENT PER NASM 1312-5 REV.1 BY ATLAS #108579

Fatigue Life per NASM1312-11
Minimum Requirement: 6500

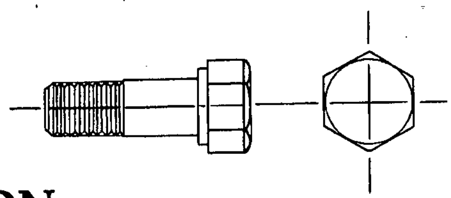
Average Cycles: 109304

Cycles :	84089	90432	130000	114070	102866
Failure:	THD	THD	NONE	THD	THD
Cycles :	130000	130000	96275	96824	130000
Failure:	NONE	NONE	THD	THD	NONE
Cycles :	130000	130000	75376	90324	0
Failure:	NONE	NONE	THD	THD	

3V LAB 05

B/E Aerospace, Inc. - Consumables Management
Self Release
Signature and Stamp:
Date: 3/21/13

3V® FASTENERS
PRECISION AEROSPACE FASTENERS
a CAM™ Company
320 Reed Circle • Corona, CA 92879
Tel: 951-734-4391 • FAX: 951-734-9488



TEST CERTIFICATION

Customer: B/E AEROSPACE LOT #: 316653 Cert #: 64967

Tensile per NASM1312-8
Minimum Requirement: 17100 LBS

Load :	20149	20097	20318	20453	20210
Failure:	THD	THD	THD	THD	THD
Load :	20148	20253	20254	20335	19989
Failure:	THD	THD	THD	THD	THD

THIS TEST CERTIFICATION SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT WRITTEN APPROVAL OF 3V FASTENERS CO., INC. TESTING LABORATORY.
THIS CERTIFICATION SHALL NOT BE USED BY THE CUSTOMER TO CLAIM PRODUCT ENDORSEMENT BY ANY AGENCY OF THE U.S. GOVERNMENT.
3V FASTENERS CERTIFIES THAT THE PRODUCT SHIPPED ON ABOVE PURCHASE ORDER WERE MANUFACTURED, INSPECTED AND TESTED IN COMPLIANCE WITH ALL APPLICABLE PRINTS AND SPECIFICATIONS. ALL SUPPORTING DOCUMENTATION IS ON FILE AT 3V.
ACCREDITED TO AS9100C, ACCREDITED ISO 9001:2008.
TRC CERTIFICATE NUMBER: TRC 00717, CAGE CODE 1ER65, COO:USA
BAE APPROVAL BAE/AG/30148/CAL, AIRBUS APPROVAL 30085.
THE RAW MATERIAL USED TO MANUFACTURE THESE PARTS WAS MELTED IN THE USA OR A QUALIFYING COUNTRY AND COMPLIES WITH THE APPLICABLE SECTIONS OF DFARS 252-225.

QUALITY ASSURANCE LAB SUPERVISOR ______________________
ROBERT CANTILLO

B/E Aerospace, Inc. - Consumables Management
Self Release

Signature and Stamp: ______________ 3V LAB 05
Date: 3/21/14

3V FASTENERS CO., INC.	FINAL INSPECTION REPORT	PG 1 OF 2

PART NUMBER	REV.	LOT #	LOT SIZE	SAMPLE SIZE
MS21250-06022	1	316653	9904	50/29/22

DESC: BOLT TEN EXT WRENCH 12PT FLANGED 3/8-24 X 2.020	PRINT NUMBER	SAMPLING PLAN
	NASM21250	NASM8831 TBL XII, S-3

PRINT CHARACTERISTIC	PRINT REQ.	ACTUAL	ACC.	REJ.	GAGE EQUIPMENT
HEAD MARKING	MS21250 LOGO	MS21250 LOGO	✓		VISUAL/10X
GRIP LENGTH +-.010	1.385-1.365	1.372-1.371	✓		CALIPER/OPT.COMP.
LENGTH +-.010	2.030-2.010	2.027-2.011	✓		CALIPER
THREAD PITCH DIA.	.3479-.3450	.3469-.3457	✓		TRI-ROLL
THREAD FUN. DIA.	.3479-.3450	.3479-.3470	✓		TRI-ROLL/RING GAGE
THREAD MAJOR DIA.	.3725-.3678	.3701-.3689	✓		MICROMETER
THREAD ROOT RADIUS	.0075-.0063	.2268-.2265	✓		OPTICAL COMPARATOR
THREAD MINOR DIA.	.3268-.3214	.3232-.3218	✓		TRI-ROLL/OPT.COMP.
B GRIP DIAMETER	.3745-.3735	.3743-.3736	✓		MICROMETER/OPT COMP
A COLLAR DIA.	.649-.639	.649-.640	✓		CALIPER
Q LAND THICKNESS	.101-.081	.090-.086	✓		OPTICAL COMPARATOR
COLLAR ANGLE	47-43 DEG.	46-45 DEG	✓		OPTICAL COMPARATOR
R RADIUS UNDER HEAD	.057-.047	.048	✓		OPTICAL COMPARATOR
H HEAD HEIGHT	.398-.378	.397-.392	✓		CALIPER/MICROMETER
WRENCH POINT DIA.	.5049-.4900	.5030-.4970	✓		CALIPER
WRENCH FLAT DIA.	.4370-.4320	.4360-.4340	✓		CALIPER/MICROMETER
CHAMFER TOP OF HEAD	32-28 DEG TO .437-.422	32 DEG TO .437-.433	✓		OPTICAL COMPARATOR
FIN THD,B/S,RAD,GRIP	32/RA MAX.	<32RA	✓		COMPARATOR GAGE/10X
FIN. ALL OTHERS	125/RA MAX.	<125RA	✓		COMPARATOR GAGE/10X
BURRS/SHARP EDGES	.016-.003	.016-.003	✓		VISUAL/10X
BEARING SURF. SQ.	90 +.5-.0 DEG	90 +.5-.0	✓		OPTICAL COMPARATOR
SHANK STRAIGHTNESS *	.0025	<.0025	✓		CONCE.GAGE/SUR.PLT.

INSP. PERFORMED & ACCEPTED BY: 3V INSP 11	DATE:February 12, 2014
REPORT PREPARED BY: ROBERT CANTILLO	3 DATE:February 10, 2014 316653

FORM 11-1, REV 5 03/17/98

NOTES:MFG DATE:9-6-13

1. * PER INCH OF LENGTH

3V FASTENERS CO., INC.	FINAL INSPECTION REPORT	PG 2 OF 2

PART NUMBER	REV.	LOT #	LOT SIZE	SAMPLE SIZE
MS21250-06022	2	316653	9904	50/29/22

DESC: BOLT TEN EXT WRENCH 12PT	PRINT NUMBER	SAMPLING PLAN
FLANGED 3/8-24 X 2.020	NASM21250	NASM8831 TBL XII, S-3

PRINT CHARACTERISTIC	PRINT REQ.	ACTUAL	ACC.	REJ.	GAGE EQUIPMENT
J LIGHTING HOLE DIA.	.270-.230	.252-.242	✓		PIN GAGE/OPT. COMP.
E LIGHT HOLE WALL THK	.197 MIN.	>.197	✓		HEIGHT STAND
INCOMPLETE THREADS	.083 MAX.	<.083	✓		OPTICAL COMPARATOR
POINT ANGLE LENGTH	.047-.015	.039-.028	✓		OPTICAL COMPARATOR
CONCENTRICITY:					
Z SHANK TO THREAD P.D.	.0045 FIM	<.0045	✓		OPTICAL COMPARATOR
SHANK TO HEAD O.D.	.008 FIM	<.008	✓		CONCENTRICITY GAGE
X SHANK TO RECESS	.008 FIM	<.008	✓		CONCENTRICITY GAGE
Y RECESS TO WRENCH FLATS	.006 FIM	<.006	✓		CONCENTRICITY GAGE

INSP. PERFORMED & ACCEPTED BY: 3V INSP 11	DATE: February 12, 2014
REPORT PREPARED BY: ROBERT CANTILLO	3 DATE: February 10, 2014 316653

FORM 11-2, REV 5 03/17/98

"Sample (s): Customer Supplied"

TEST REPORT

108579

3V LAB 05

ATLAS TESTING LABORATORIES, INC.

9820 6th Street, Rancho Cucamonga, CA 91730 909-373-4130 FAX 909-373-4132

TG 3

PO# 108579

DATE: 02/04/14
ATL# 428698

CLIENT: 3V FASTENERS
ATTN: NICOLE MATTHESON
320 REED CIRCLE
CORONA, CA 92879-1349

PN# MS21250-06022
ROUTER# 316653
LOT QTY: 10,013
QTY: 5 PCS.

ALLOY: 8740

SPEC: NASM 21250 REV. NEW, NASM 8831 REV. 4

HYDROGEN EMBRITTLEMENT TEST: (METHOD - NASM 1312-5 REV.1 & AMS-QQ-P-416C)

Test Temperature:	Room Temperature
Type of Specimen	Fastener
Specimen Size (in):	.3750
Load (lbs):	14,535 lbs
Pan Load (lever arm ratio 20 to 1):	726.8 lbs.
Test Duration:	23.1 hrs.
Results:	No Failure / Test Discontinued
Number of samples tested:	Five (5)
Minimum Requirements:	Stress 85% of 17,100 lbs. for 23.0 hrs. (14,535 lbs.)

ATE# 905-A

MAGNETIC PARTICLE INSPECTION: (METHOD - ASTM-E1444/12)

Five (5) samples tested all Satisfactory

Remarks: Conforms to requirements.

Respectfully Submitted: [signature]

Wendy P. Franco, Quality Assurance

Date: 2/4/14

ATLAS TESTING SUBMITS THIS REPORT AS THE CONFIDENTIAL PROPERTY OF OUR CLIENT. REPRODUCTION IS AUTHORIZED, BUT ONLY IF IN FULL. THE RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT INFORMATION TO THIS REPORT MAY BE PUNISHABLE UNDER FEDERAL LAW.

583321
136571
2-11-14

3V INSP 08

ACTIVE MAGNETIC INSPECTION, INC.

9356 1/2 San Fernando Road, Unit B • Sun Valley, CA 91352
(818) 504-0677 • FAX (818) 504-1559

SOLD TO: 3V FASTENERS
320 REED CIRCLE
CORONA , CA 92879
(951) 734-4391

TERMS: net 30

DATE CERTIFIED:	DATE RECEIVED:	DATE TESTED:	CUSTOMER P.O.	PACKAGING METHOD
02-10-2014	01-30-2014	02-10-2014	136571/00869215	17 Pan

9904 820#	MS21250-06022 MAG 3/8-24 X 2.020 12 POINT BOLT R/N# 316653	

RECEIVED FEB 11 2014 By

TOTAL 2

MATERIAL / HEAT TREAT / STATUS OF PARTS: 8740/FINAL

PASSIVATE

Other

MAGNETIC SPECIFICATIONS ASTM-E-1444/E1444M-12

Acceptance Criteria

Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected
9904	0												

Reason Rejected

FLUORESCENT PENETRANT SPECIFICATIONS

Acceptance Criteria

Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected

Reason Rejected

QC NDT Level 2: REYES HERNANDEZ

This test certification shall not be reproduced except in full. This certification shall not be used by the customer to claim product endorsement by any agency of the U.S. government. Active Magnetic Inspection certifies that the product shipped on the above certification were processed, inspection & tested in compliance with all applicable prints & specifications. All supporting documentation is on file at Active Magnetic Inspection.

CERTIFICATION / TEST / REPORT

1-29-14 136279 582739

ACTIVE MAGNETIC INSPECTION, INC.

3V INSP 08

9356 1/2 San Fernando Road, Unit B • Sun Valley, CA 91352
(818) 504-0677 • FAX (818) 504-1559

SOLD TO: 3V FASTENERS
320 REED CIRCLE
CORONA , CA 92879
(951) 734-4391

TERMS: net 30

DATE CERTIFIED:	DATE RECEIVED:	DATE TESTED:	CUSTOMER P.O.
01-29-2014	01-29-2014	01-29-2014	136279/00868001

10013 824#	MS21250-06022 CAD PLATE 23HRS POSTBAKE SURCHARGE 10%
	3/8-24 X 2.020 12 POINT BOLT R/N# 316653

RECEIVED JAN 29 2014 By

MATERIAL / HEAT TREAT / STATUS OF PARTS 8740/RC# 41 42 43

TOTAL

PASSIVATE PostBake 23HRS 375F+-25F

Other Cad Plate Type II Class 2 AMS-QQ-P-416C

MAGNETIC SPECIFICATIONS

Acceptance Criteria

Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected

Reason Rejected

FLUORESCENT PENETRANT SPECIFICATIONS

Acceptance Criteria

Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected	Accepted	Rejected

Reason Rejected

QC NDT Level 2T REYES HERNANDEZ

This test certification shall not be reproduced except in full. This certification shall not be used by the customer to claim product endorsement by any agency of the U.S. government. Active Magnetic Inspection certifies that the product shipped on the above certification were processed, inspection & tested in compliance with all applicable prints & specifications. All supporting documentation is on file at Active Magnetic Inspection.

CERTIFICATION / TEST / REPORT

QUALITY HEAT TREATING, INC.

3305 BURTON AVE.
BURBANK
CALIFORNIA 91504
323-849-6604
818-840-8212
FAX 818-953-5056
www.qualityht.com

CERTIFICATION

134831
CERTIFICATION NUMBER
433207

12/12/13
TC

SOLD TO:
3 V FASTENERS COMPANY INC
320 REED CIRCLE
CORONA, CA 92879

3V LAB 09

SHIP TO:
3 V FASTENER COMPANY INC
320 REED CIRCLE
CORONA, CA 92879

CUSTOMER NUMBER	DATE RECEIVED	CUSTOMER P.O. NUMBER	CUSTOMER SHIPPER
0001433	12/03/13	00862500	134831/134833

QUANTITY	WEIGHT	PART NUMBER / DESCRIPTION
10524	885	MS21250-06022, 3/8-24 X 2.020 12 POINT BOLT ROUTER#316653-40.00, HT TO 180 KSI MIN PO#00862501, FATIGUE RATED

RECEIVED DEC 12 2013 By

MATERIAL	HARDNESS	MAX-CROSS SECTION	CASE DEPTH	CORE HARDNESS
8740	40-43 HRC	.376		

SPECIFICATIONS AMS 2759/1 E PYROMETRY PER AMS 2750 D ASTM A 380-06 GLASSBEAD BLAST ONLY

PROCESS	SPEC TEMP	SPEC TIME	EQUIP.	ACT TEMP	TIME IN	TIME AT-HEAT	TIME OUT	ATMOS DEWPT	Q-MED & TEMP	DATE
VERIFY			VERFY		.25	Y				12/04
RUN PARTS IN FLAT BASKETS NO MORE THAN 1 INCHE DEEP AND NO MORE THAN 100 LBS PER BASKET. THIS WILL BE 2 PANS MAX PER BASKET, 2 BASKETS MAX. RUN A METAL TUBE IN THE BOTTOM BASKET TO SUPPORT THE TOP BASKET, AND ALLOW OIL FLOW FOR PROPER QUENCHING.										
WASH			VERFY		.25	Y				12/04
AUSTENITIE	1550	1:00	Q39	1550	22:45	23:20	00:20	.40	OIL	12/05
WASH			QW1		.17	Y				12/05
TEMPER 15	800	3:30	Q28	800	01:30	01:50	05:20	AIR	A/C	12/05
VERIFY			VERFY		.02	Y				12/06
GLASSBEAD			GLASS		2.00	Y				12/11
LOAD: 02										
VERIFY			VERFY		.25	Y				12/04
RUN PARTS IN FLAT BASKETS NO MORE THAN 1 INCHE DEEP AND NO MORE THAN 100 LBS PER BASKET. THIS WILL BE 2 PANS MAX PER BASKET, 2 BASKETS MAX. RUN A METAL TUBE IN THE BOTTOM BASKET TO SUPPORT THE TOP BASKET, AND ALLOW OIL FLOW FOR PROPER QUENCHING.										
WASH			VERFY		.25	Y				12/04
AUSTENITIE	1550	1:00	Q39	1550	00:45	01:20	02:20	.40	OIL	12/05
WASH			QW1		.16	Y				12/05

*****CONTINUED ON PAGE 2

INSPECTOR DATE QUALITY MANAGER

*****SEE LAST PAGE FOR SIGNATURES AND TEST RESULTS*****

This Process Certification covers thermal processing and/or hardness testing only. No particular mechanical properties of any material should be assumed, or are implied, as a result of the thermal processing and/or hardness testing ci on this Process Certification. Material processed in a mercury-, radium- and asbestos-free environment. Unless otherwise specified above, for all AMS material specifications, no qualification or periodic testing has been performed.
ALL FURNACES CERTIFIED TO MEET THE REQUIREMENTS OF AMS-H-6875, CURRENT REVISION. HARDNESS TESTING PERFORMED TO THE LATE REVISION OF ASTM E 384, ASTM E 10, ASTM E 110, ASTM E 18, ASTM E 140 AND ASTM A 370.

WireTech, Inc.
6440 E. Canning Street
Los Angeles, CA 90040
Phone (323) 722-4933
Fax (323) 721-2738

CERTIFICATION

WORK ORDER 100738 14207

7-27-13

HEAT NO. 10175090

SALES ORDER / RLS 850767 / 1

ISO 9001-2000 REGISTERED

3V LAB 06

ACCREDITED
MECHANICAL TESTING
CERT # 911.01

SOLD TO

3V Fasteners
320 Reed Circle
Corona, CA 92879-1349
USA

CERT# 911.01

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	CARRIERS	LADING NO	SHIPMENT DATE
•107050	.4980-.5000 8740	2,091 Lbs	2	00105081	07/26/2013

SPECIFICATION T338740-104990A
A-8740, AQ, SKFG, CHQ WIRE, SEAM & DECARB FREE, SAIP Zinc Phosphate, Lime & Stearate Coating, Size:0.498/0.500 Specifications: AMS 2301K, AMS6322N, MIL-S-6049A,AMEND. 1, AMS-S-6049-A

CERTIFICATION REQUIREMENTS

Chemical Properties

C	Si	Mn	P	S	Cu	Ni	Cr	Mo
.40	.27	.86	.01	.006	.1	.44	.55	.21

Physical Properties

Grain Size	Jominy 1	Jominy 2	Jominy 3	Inclusions	Macro	Cleanliness	Mill Source
6	J5=55	J8=48	J10=46	S2-R1-C2	GOOD	F&S=0	Charter

Country of Origin
USA - DFAR Compliant

Mechanical Properties

TEST	UNITS	Results
Tensile Strength	KSI	85.0
Yield Strength	KSI	72.3
% Elongation	%	31
% Reduction of Area	%	72.9
Rockwell Hardness B Scale	HRB (s)	87
Decarb (Total)	in	0.00

G.G. 7-27-13

~~1-116~~ ~~2-174~~ ~~3-185~~ ~~4-177~~ ~~5-192~~

•1-226 •2-249 •3-236 •4-245

•5-232 •6-215 •7-238 •8-267 •9-183

2091 Lbs

Merchandise covered by this invoice is warranted to be free from defects in workmanship or material but not for any specific length of time, type or measure of service. No claim for allowance will be recognized unless presented in writing within 10 days time after receipt of material. Our maximum liability for any claim predicated upon defective merchandise is limited to replacement of it, or to repayment of it, or to repayment of the purchase price thereof, as we elect. Material cut to specific length or size cannot be returned for credit and request for cancellation of such orders will not be considered if manufacture has been commenced. Buyer, by acceptance of the merchandise covered by this invoice, agrees to the foregoing terms and conditions and those set forth on the reverse hereof. "The recording of false, fictitious or fraudulent statements or entries on this document may be punished as a felony under Federal statutes including Federal law, Title 18, Chapter 47."
REPRODUCTION OF THIS CERTIFICATION IS NOT ALLOWED UNLESS IN FULL

Wire Tech, Inc. metallurgical laboratory is accredited in the following test: chemical analysis per ASTM E 415, mechanical testing per ASTM A 370, Rockwell hardness per ASTM E 18, metallographic mount preparation per ASTM E 3, decarburization depth per ASTM E 1077, IFI 140, inclusion rating per ASTM E 45, decarburization performed as per IFI 140.
The reported Chemical and Physical Properties are Melt Source results. Transcribed from mill certificates. HRB(W) are hardness results performed with a 1/16" carbide ball. Unless otherwise specified, HRB and HRC results are conversions from ASTM A370 tables 1 and 2. •Test result not covered by our current A2LA accreditation. Tests which have been undertaken by a subcontractor laboratory that is not accredited are not endorsed by A2LA or covered by Wire Tech, Inc. A2LA accreditation.
TEST RESULTS RELATE ONLY TO THE ITEMS TESTED.
"LATEST REVISIONS OF ASTM"

DFAR Material per Clauses 252.225-7014 ALT. 1, 252.225-7009, & 225.003(9)

Material is free of mercury, radium, or alpha contamination.

qtc302 (v1.1)

Garry Goodson [signature]

07/26/2013
DATE

14207

CHARTER STEEL

A Division of
Charter Manufacturing Company, Inc.

EMAIL

3V LAB 06

1658 Cold Springs Road
Saukville, Wisconsin 53080
(262) 268-2400
1-800-437-8789
FAX (262) 268-2570

CHARTER STEEL TEST REPORT
Reverse Has Text And Codes

Wiretech Incorporated
6440 East Canning Street
Attn: Andre Stephan
Los Angeles,CA-90040

Cust P.O.	6774-5
Customer Part #	8740C1A170-C
Charter Sales Order	70028555
Heat #	10175090
Ship Lot #	4121247
Grade	8740 R SK FG AQ 43/64
Process	HRSA
Finish Size	43/64

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed below and on the reverse side,and that it satisfies these requirements.

Test Results of Heat Lot# 10175090

Lab Code: 7388

CHEM	C	MN	P	S	SI	NI	CR	MO	CU	SN	V
%Wt	.40	.86	.010	.006	.27	.44	.55	.21	.10	.008	.001

AL	N	B	TI	NB
.024	.0060	.0001	.001	.002

JOMINY(HRC)	JOM01	JOM02	JOM03	JOM04	JOM05	JOM06	JOM07	JOM08	JOM09	JOM10	JOM12
	56	56	56	56	55	52	50	48	47	46	43

JOM14	JOM16	JOM18	JOM20	JOM24	JOM28	JOM32
41	38	37	36	34	32	31

JOMINY SAMPLE TYPE ENGLISH = C
MACRO ETCH SURFACE = 1 MACRO ETCH RANDOM = 1 MACRO ETCH CENTER = 1
AMS 2301 FREQUENCY AVERAGE = .00 AMS 2301 FREQUENCY INDIVIDUAL = .00
AMS 2301 SEVERITY AVERAGE = .00 AMS 2301 SEVERITY INDIVIDUAL = .00
CHEM. DEVIATION EXT.-GREEN =

Test Results of Rolling Lot# 1059027

REDUCTION RATIO = 85:1

Test Results of Processing Lot# 4121183,4121247

	# of Tests	Min Value	Max Value	Mean Value	
TENSILE	2.0	83.2	83.3	83.2	TENSILE LAB = 0358-02
REDUCTION OF AREA	2	64	66	65	RA LAB = 0358-02
ROCKWELL B	2	83	83	83	RB LAB = 0358-02

NUM DECARB = 2 FREE FERRITE DECARB = .000 FREE FERR & PARTIAL DECARB = .003
CP SPHERO % LAB = 0358-02 NUM SPHERO = 2 SPHERODIZATION = 83.8

Specifications: Manufactured per Charter Steel Quality Manual Rev 9,08-01-09
Meets customer specifications with any applicable Charter Steel exceptions for the following customer documents:
Customer Document = AMS6322N/AMS2301K/COP3010M/BS2S147:1976 CHEM ONLY Revision = Dated =

Additional Comments:

Charter Steel
Saukville, WI, USA

ACCREDITED Testing Laboratory

This MTR supersedes all previously dated MTRs for this order

Janice Barnard
Manager of Quality Assurance
02/14/2012

Rem: Load1,Fax0,Mail0

14207

3V LAB 06

The following statements are applicable to the material described on the front of this Test Report:

1. Except as noted, the steel supplied for this order was melted, rolled, and processed in the United States meeting DFAR's compliance.
2. Mercury was not used during the manufacture of this product, nor was the steel contaminated with mercury during processing.
3. Unless directed by the customer, there are no welds in any of the coils produced for this order.
4. The laboratory that generated the analytical or test results can be identified by the following key:

Certificate Number	Lab Code	Laboratory		Address
0358-01	7388	CSSM	Charter Steel Melting Division	1653 Cold Springs Road, Saukville, WI 53080
0358-02	8171	CSSR/ CSSP	Charter Steel Rolling/ Processing Division	1658 Cold Springs Road, Saukville, WI 53080
0358-03	123633	CSFP	Charter Steel Ohio Processing Division	6255 US Highway 23, Risingsun, OH 43457
0358-04	125544	CSCM/ CSCR	Charter Steel Cleveland	4300 E. 49th St., Cuyahoga Heights, OH 44125-1004
•	•	--	Subcontracted test performed by laboratory not in Charter Steel system	

5. When run by a Charter Steel laboratory, the following tests were performed according to the latest revisions of the specifications listed below, as noted in the Charter Steel Laboratory Quality Manual:

Test	Specification	CSSM	CSSR/CSSP	CSFP	CSCM/CSCR
Chemistry Analysis	ASTM E415; ASTM E1019	X			X
Macroetch	ASTM E381	X			X
Hardenability (Jominy)	ASTM A255; SAE J406; JIS G0561	X			X
Grain Size	ASTM E112	X	X	X	X
Tensile Test	ASTM E8; ASTM A370		X	X	X
Rockwell Hardness	ASTM E18; ASTM A370	X	X	X	X
Microstructure (spheroidization)	ASTM A892		X	X	
nclusion Content (Methods A, E)	ASTM E45		X		X
Decarburization	ASTM E1077		X	X	X

Charter Steel has been accredited to perform all of the above tests by the American Association for Laboratory Accreditation (A2LA). These accreditations expire 01/31/13.

All other test results associated with a Charter Steel laboratory that appear on the front of this report, if any, were performed according to documented procedures developed by Charter Steel and are not accredited by A2LA.

6. The test results on the front of this report are the true values measured on the samples taken from the production lot. They do not apply to any other sample.
7. This test report cannot be reproduced or distributed except in full without the written permission of Charter Steel. The primary customer whose name and address appear on the front of this form may reproduce this test report subject to the following restrictions:
   - It may be distributed only to their customers
   - Both sides of all pages must be reproduced in full
8. This certification is given subject to the terms and conditions of sale provided in Charter Steel's acknowledgement (designated by our Sales Order number) to the customer's purchase order. Both order numbers appear on the front page of this Report.
9. Where the customer has provided a specifiction, the results on the front of this test report conform to that specification unless otherwise noted on this test report.

A2LA ACCREDITED Testing Laboratory

B/E AEROSPACE

B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
8	12	EA	MS21061L08K		57302	PAOLO ASTORI	A3856		

06/20/14

Jason Lewis
Vice President of Quality

Inv # 06/20/14

PAOLO ASTORI SPA
Via Mirabella, 9 - Maggiate Superiore
28013 Gattico (NO) - ITALY
Tel. (+39) 0322 838847
Fax (+39) 0322 880198
Web: www.paoloastori.com

CERTIFICATE OF CONFORMANCE

N° 4750 | **Date** 23/05/2014 | Pag. 1 / 1

Purchased by:
B/E AEROSPACE INC.CONSUMABLES MANAG
10000 NW 15TH TERRACE
MIAMI - FL
USA

Shipped to:
B/E AEROSPACE INC.CONSUMABLES MANAG
9835 NW 14TH ST.

33172 MIAMI - FL US

This is to certify that goods listed below have been inspected in our plant and are up to your orders and to the specifications of the drawings mentioned therein.

Country of origin is ITALY.

Pos.	Part Number	Purchase Order	PO Date	Quantity	U.M.	Batch #	Cure Date Expiry Date
1	MS21061L08K RELEASE 9G2D0PEL12(Rev. REV2)	0PEL12	13/05/2013	5024	N	57302	
2	MS21061L08K RELEASE 9G2D0PEL12(Rev. REV2)	0PEL12	13/05/2013	5000	N	57302	

- SUPPLIES RELEASED IN ACCORDANCE WITH REQUIREM. OF BAE/AG/SC1 PART 3- APPROVAL # BAE/AG/30631/MAA AND WITH AIRBUS SAS APPROVAL # 204788 Se sotto 150 lbs sped con fedex ground, account #0331-0149-0,mark:collect;se sopra 150 lbs sped con fedex economy,account #018757

Airbus approval # 204788 - BAE Approval # BAE/AG/30631/MAA - Complies with DFARS 252.225-7014.
Agusta-Westland Q500 approval # A/0047

All claims regarding the parts in subject must be reported to seller promptly. Credit or replacement of parts may be limited to those parts for which traceability has been mantained by the buyer. The seller manufacturing lot identification number and return authorization (RMA) must accompany all returns. Any discrepancy claimed by the Customer must be made in writing to seller not later than ninety (90) days after the shipping date. The liability of seller on parts found to be defective is limited to replacement or rework of such goods, at seller option, and in no case is to exceed the invoice value of such goods. Under no circumstance will seller be liable for damages or cost incurred by buyer or subsequent user beyond the invoiced value of the parts in subject.

MOD. CERCON-05

PAOLO ASTORI
OADI AUTOBLOCCANTI e MINUTERIE METALLICHE per COSTRUZIONI AERONAUTICHE

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV
= EN 9100:2003 =

Capitale Sociale € 120.000,00 int. vers.
Cod. Fisc., Part. I.V.A. e R.I. Novara 00111940037
R.E.A. Novara 48560 - Albo Imp-Exp NO 009081

PAOLO ASTORI SpA - Via Mirabella, 9
28013 MAGGIATE SUP. - GATTICO (NO) - ITALY
Tel. +39 0322 838847 - Fax +39 0322 880196
www.paoloastori.com

Certificate of Test

Manufacturer:	Paolo Astori spa, Via Mirabella 9, 28013 Gattico (NO), ITALY
Report number :	130
Date performed:	2014-05-16
Inspector:	MATTIAS , VALLETTO
Procurement spec:	NASM25027 NUT, SELF-LOCKING, 250F, 450F, AND 800F
Part code:	1OAD25A086N43
Part number:	**MS21061L08K**
Product standard:	MS21061 NASM21061 NUT, SELF-LOCKING, PLATE, ONE LUG, FLOATING, LOW HEIGHT, ALLOY STEEL.
Revision level:	see certificate of conformity
Batch number:	**57302**
Batch quantity:	12000
Manufacturing date:	2014-05-12
Additional cross-references:	NAS687A08K
Customer:	see certificate of conformity
Purchase order:	see certificate of conformity
Quantity delivered:	see certificate of conformity

1 Statement of Conformity

This is to certify that parts have been produced, controlled and accepted according to the requirements of the applicable specification called by the purchase order and/or the applicable standard drawing. Material, heat and surface treatements and manufacturing processes are the same as those used for the qualification approval. Samples for tests have been randomly selected from the production batch covered by this document. Country of origin is Italy. This report shall not be reproduced except in full, without the written approval of Paolo Astori spa.

2 Disclaimer

All claims regarding the parts in subject must be reported to seller promptly. Credit or replacement of parts may be limited to those parts for which traceability has been maintained by the buyer. The seller's manufacturing lot identification number and return authorization (RMA) must accompany all returns. Any discrepancy claimed by the Customer must be made in writing to seller not later than ninety (90) days after the shipping date. The liability of seller on parts found to be defective is limited to replacement or rework of such goods, at seller option, and in no case is to exceed the invoiced value of such goods. Under no circumstances will seller be liable for damages or costs incurred by buyer or subsequent user beyond the invoice value of the parts in subject.

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3 Components and raw materials

Component name	Component batch	Material batch	Heath	Material spec
BASKET	56690	-2184		SAE1042 (MEQU13/01C)
NUT	52088	-2759	8618	EC1042 A01

4 Finishing

Component name	Process	Specification
BASKET	CAD PLATING	AMS-QQ-P-416C
BASKET	LUBRICATION	NASM25027
NUT	CAD PLATING	AMS-QQ-P-416C
NUT	LUBRICATION	NASM25027

5 Hardness

Component name	min hardness	max hardness	avg hardness
NUT	80.50 HR15N	82.00 HR15N	81.35 HR15N

6 Final inspection measurements

6.1 SELF LOCKING DEVICE EXAMINATION

Unit of measure: ATTR

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Number of samples tested: 20

6.2 THREAD FIT

Unit of measure: ATTR

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
OK	OK	OK	OK	OK	OK	OK	OK		

Number of samples tested: 8

PAOLO ASTORI
DADI AUTOBLOCCANTI e MINUTERIE METALLICHE per COSTRUZIONI AERONAUTICHE

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV
= EN 9100:2003 =

Capitale Sociale € 120.000,00 int. vers.
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R.E.A. Novara 48560 - Albo Imp.Exp. NO 009051

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6.3 BEARING SURFACE SQUARENESS

Unit of measure: mm (*inch*)

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
0.05 (*0.0020*)	0.05 (*0.0020*)	0.08 (*0.0031*)	0.05 (*0.0020*)	0.05 (*0.0020*)	0.05 (*0.0020*)	0.08 (*0.0031*)	0.05 (*0.0020*)		

Number of samples tested: 8

	Min	Max	Avg
Allowed:	- (-)	0.10 (*0.0039*)	
Found:	0.05 (*0.0020*)	0.08 (*0.0031*)	0.06 (*0.0023*)

6.4 SURFACE FINISH, PLATING OR SURFACE TREATMENT

Unit of measure: ATTR

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
OK	OK	OK	OK	OK	OK	OK	OK		

Number of samples tested: 8

6.5 RIVET HOLE LOCATION AND ALIGNEMENT

Unit of measure: mm (*inch*)

#1	#2	#3	#4	#5
7.93 (*0.3122*)	7.93 (*0.3122*)	7.92 (*0.3118*)	7.92 (*0.3118*)	7.93 (*0.3122*)
7.90 (*0.3110*)	7.93 (*0.3122*)	7.92 (*0.3118*)		

Number of samples tested: 8

	Min	Max	Avg
Allowed:	7.87 (*0.3098*)	7.97 (*0.3138*)	
Found:	7.90 (*0.3110*)	7.93 (*0.3122*)	7.92 (*0.3119*)

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6.6 HEIGHT OF NUT

Unit of measure: mm (*inch*)

#1	#2	#3	#4	#5
6.03 (*0.2374*)	6.02 (*0.2370*)	6.01 (*0.2366*)	6.02 (*0.2370*)	6.05 (*0.2382*)
6.00 (*0.2362*)	6.05 (*0.2382*)	6.02 (*0.2370*)		

Number of samples tested: 8

	Min	Max	Avg
Allowed:	- (-)	6.35 (*0.2500*)	
Found:	6.00 (*0.2362*)	6.05 (*0.2382*)	6.03 (*0.2372*)

6.7 LOOSE OR HANGING BURRS

Unit of measure: ATTR

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
OK	OK	OK	OK	OK	OK	OK	OK		

Number of samples tested: 8

6.8 ALL OTHER DIMENSIONAL CHARACTERISTICS NOT COVERED

Unit of measure: ATTR

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
OK	OK	OK							

Number of samples tested: 3

6.9 AXIAL TENSILE STRENGTH

Unit of measure: N (*lb*)

#1	#2	#3	#4	#5
8000.00 (*1798.4715*)	7850.00 (*1764.7502*)	7800.00 (*1753.5098*)	7922.40 (*1781.0264*)	7977.07 (*1793.3167*)
7866.49 (*1768.4573*)	7900.25 (*1776.0469*)	7894.64 (*1774.7857*)	7836.16 (*1761.6388*)	7823.88 (*1758.8782*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	7654.00 (*1720.6876*)	- (-)	
Found:	7800.00 (*1753.5098*)	8000.00 (*1798.4715*)	7887.09 (*1773.0881*)

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R.E.A. Novara 48560 - Albo Imp-Exp NO 009081

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6.10 MAX LOCKING TORQUE 1st CYCLE

Unit of measure: Nm (*lb-in*)

#1	#2	#3	#4	#5
1.15 (*10.1784*)	0.92 (*8.1427*)	1.05 (*9.2933*)	1.07 (*9.4703*)	1.05 (*9.2933*)
0.99 (*8.7622*)	0.95 (*8.4082*)	0.96 (*8.4967*)	0.93 (*8.2312*)	0.98 (*8.6737*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	- (-)	1.70 (*15.0463*)	
Found:	0.92 (*8.1427*)	1.15 (*10.1784*)	1.01 (*8.8950*)

6.11 MAX LOCKING TORQUE 7th CYCLE

Unit of measure: Nm (*lb-in*)

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
0.80 (*7.0806*)	0.40 (*3.5403*)	0.44 (*3.8943*)	0.66 (*5.8415*)	0.71 (*6.2840*)	0.60 (*5.3104*)	0.75 (*6.6381*)	0.62 (*5.4875*)	0.65 (*5.7530*)	0.74 (*6.5496*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	- (-)	1.70 (*15.0463*)	
Found:	0.40 (*3.5403*)	0.80 (*7.0806*)	0.64 (*5.6379*)

6.12 MAX LOCKING TORQUE 15th CYCLE

Unit of measure: Nm (*lb-in*)

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
0.80 (*7.0806*)	0.30 (*2.6552*)	0.79 (*6.9921*)	0.71 (*6.2840*)	0.57 (*5.0449*)	0.72 (*6.3725*)	0.53 (*4.6909*)	0.31 (*2.7437*)	0.33 (*2.9207*)	0.66 (*5.8415*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	- (-)	1.70 (*15.0463*)	
Found:	0.30 (*2.6552*)	0.80 (*7.0806*)	0.57 (*5.0626*)

PAOLO ASTORI
DADI AUTOBLOCCANTI e MINUTERIE METALLICHE per COSTRUZIONI AERONAUTICHE

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV
= EN 9100:2003 =

PAOLO ASTORI SpA - Via Mirabella, 9
28013 MAGGIATE SUP. - GATTICO (NO) - ITALY
Tel. +39 0322 838847 - Fax +39 0322 880198
www.paoloastori.com

6.13 MIN.BREAKAWAY TORQUE 1st CYCLE

Unit of measure: Nm (*lb-in*)

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
0.78 (*6.9036*)	0.62 (*5.4875*)	0.64 (*5.6645*)	0.63 (*5.5760*)	0.65 (*5.7530*)	0.67 (*5.9300*)	0.61 (*5.3990*)	0.58 (*5.1334*)	0.60 (*5.3104*)	0.68 (*6.0185*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	0.17 (*1.5046*)	- (-)	
Found:	0.58 (*5.1334*)	0.78 (*6.9036*)	0.65 (*5.7176*)

6.14 MIN.BREAKAWAY TORQUE 7th CYCLE

Unit of measure: Nm (*lb-in*)

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
0.74 (*6.5496*)	0.35 (*3.0978*)	0.31 (*2.7437*)	0.47 (*4.1599*)	0.44 (*3.8943*)	0.28 (*2.4782*)	0.56 (*4.9564*)	0.49 (*4.3369*)	0.65 (*5.7530*)	0.39 (*3.4518*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	0.17 (*1.5046*)	- (-)	
Found:	0.28 (*2.4782*)	0.74 (*6.5496*)	0.47 (*4.1421*)

6.15 MIN.BREAKAWAY TORQUE 15th CYCLE

Unit of measure: Nm (*lb-in*)

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
0.72 (*6.3725*)	0.26 (*2.3012*)	0.26 (*2.3012*)	0.64 (*5.6645*)	0.59 (*5.2219*)	0.32 (*2.8322*)	0.38 (*3.3633*)	0.65 (*5.7530*)	0.53 (*4.6909*)	0.60 (*5.3104*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	0.17 (*1.5046*)	- (-)	
Found:	0.26 (*2.3012*)	0.72 (*6.3725*)	0.50 (*4.3811*)

PAOLO ASTORI
DADI AUTOBLOCCANTI e MINUTERIE METALLICHE per COSTRUZIONI AERONAUTICHE

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV
= EN 9100:2003 =

Capitale Sociale € 120.000,00 int. vers.
Cod. Fisc., Part. I.V.A. e R.I. Novara 00111940037
R.E.A. Novara 48560 - Albo Imp. Exp. NO 009081

PAOLO ASTORI SpA - Via Mirabella, 9
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www.paoloastori.com

6.16 TORQUE-OUT

Unit of measure: Nm (*lb-in*)

#1	#2	#3	#4	#5
5.50 (*48.6791*)	5.30 (*46.9090*)	5.35 (*47.3515*)	5.57 (*49.2987*)	5.61 (*49.6527*)
5.56 (*49.2101*)	5.42 (*47.9710*)	5.45 (*48.2366*)	5.54 (*49.0331*)	5.34 (*47.2630*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	5.08 (*44.9618*)	- (-)	
Found:	5.30 (*46.9090*)	5.61 (*49.6527*)	5.46 (*48.3605*)

6.17 PUSH-OUT

Unit of measure: N (*lb*)

#1	#2	#3	#4	#5
380.00 (*85.4274*)	400.00 (*89.9236*)	397.99 (*89.4717*)	388.61 (*87.3630*)	398.18 (*89.5144*)
380.12 (*85.4544*)	382.68 (*86.0299*)	383.33 (*86.1760*)	387.55 (*87.1247*)	384.53 (*86.4458*)

Number of samples tested: 10

	Min	Max	Avg
Allowed:	356.00 (*80.0320*)	- (-)	
Found:	380.00 (*85.4274*)	400.00 (*89.9236*)	388.30 (*87.2931*)

6.18 DISCONTINUITIES

Unit of measure: ATTR

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
OK	OK								

Number of samples tested: 32

PAOLO ASTORI
DADI AUTOBLOCCANTI e MINUTERIE METALLICHE
per COSTRUZIONI AERONAUTICHE

COMPANY WITH QUALITY MANAGEMENT
SYSTEM CERTIFIED BY DNV
= EN 9100:2003 =

Capitale Sociale € 120.000,00 int. vers.
Cod. Fisc., Part. I.V.A. e R.I. Novara 01115940037
R.E.A. Novara 49560 - Albo Imp. Esp. NO 009091

PAOLO ASTORI SpA - Via Mirabella, 9
28013 MAGGIATE SUP. - GATTICO (NO) - ITALY
Tel. +39 0322 838847 - Fax +39 0322 880198
www.paoloastori.com

6.19 23-HOURS STRESS EMBRITTMENT

Unit of measure: ATTR

#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

Number of samples tested: 10

PAOLO ASTORI SPA
2759
RAW MATERIAL LOT

THEIS

Friedr. Gustav Theis Kaltwalzwerke GmbH Postfach 6432 58088 Hagen

Kunde	PAOLO ASTORI SRL VIA MIRABELLA, 9 28013 MAGGIATE SUPERIORE (	Abnahmeprüfzeugnis/Inspection certificat/Certificat de réception EN 10204 3.1 Zeugnis-Nr./Certificate No./No. du certificat: 228981 Ihre Bestell-Nr./Order-No./No de commande: 17849 Unsere Kom.-Nr./Our Order No./Notre commande: 22165371 / 1 / 1 — Alt-Kommissions-Nr.: 265371 Datum/Date/Date: 09.12.11

Liefervorschrift/Specification/Spécification: Kundenartikelnummer 4NAC452000791, Kundenspezifikation 1 13/01 rev. D + our comments dated 30.04.10, Kundenspezifikation 2 C45E similar to SAE 1042, Massnorm DIN-EN-10140

Werkstoff/Quality/Nuance: C45E (Ck45) DIN-EN-10132-3

Chargen-Nr./Cast No./Coulée No.: 8618

Schmelzanalyse/Cast Analysis/Analyse de coulée(%)

		C	Si	Mn	P	S	Al	Nb	Ti	Cu	Cr	Ni	N	V	Mo	B
Soll	min															
	max															
Ist		0.4600	0.2400	0.6500	0.0090	0.0010	0.0300				0.2400					

Abmessung / Dimension / Dimension (mm): Solldicke 0.790, Sollbreite 20.00, Solllänge

Mechanische Werte/Mechanical Properties/Charactéristiques mécaniques

	Rp0.2(N/qmm) längs Soll	Rp0.2 längs Ist	Rp0.2 quer Soll	Rp0.2 quer Ist	Rm(N/qmm) längs Soll	Rm längs Ist	Rm quer Soll	Rm quer Ist	Dehnung A80 längs Soll	Dehnung A80 längs Ist	Dehnung A80 quer Soll	Dehnung A80 quer Ist	12 mm Soll	12 mm Ist	Zug % Soll	Zug % Ist	Härte Soll	Härte Ist	Soll	Ist	Ra OS Soll	Ra OS Ist	Ra US Soll	Ra US Ist	Zn OS Soll	Zn OS Ist	Zn US Soll	Zn US Ist	
min		348				515			25.0	27.4																			
max					520																								

Metallografische Werte / metallographic values / valeurs métallographiques: Reinheitsgrad DIN 50602 M1 Entkohlung DIN 50192 Rst M 0.000 (+0.050 mm), Feinkorngröße DIN 50601 10-11

Nettogewicht/net weight/poids net	8.839,000	Lieferschein-Nr./delivery note No./Bon de livraison	330275
Bruttogewicht/gross weight/poids brut	8.947,000	Paletten-anzahl/number of palets/nombre de palettes	9
Collanzahl/number of coils/nombre de rouleaux	80		
Sonstige Angaben:	Biegeproben i.O.,		

THEIS Qualitätsmanagement

Abnahmebeauftragter
Inspection representative
Inspection responsabilite

Michael Simon

Dies, durch ein geeignetes Datenverarbeitungssystem erstellte Bescheinigung ist gemäß EN 10204, Absatz 5, ohne Unterschrift gültig. This certificate has been prepared by a qualified data processing system and is valid without signature in accordance with EN 10204, section 5. Ce certificat, qui a été établi par un système informatique approprié, est valable sans signature, conformément à EN 10204, paragraphe 5

THEIS Ibérica
Theis Ibérica, S.A. - Fábrica y oficinas en Urbi, s/n. - E-48970 BASAURI (Vizcaya)
Teléfonos: 944 263 411 (Comercial) - 944 263 911 (Administración) - Telefax 944 491 816 - E-mail: theis@theis-iberica.com

C.N.º 953126

CERTIFICADO DE CALIDAD / *TEST CERTIFICATE* / RELEVÉ DE CONTROL EN 10.204 3.1

CLIENTE / *CUSTOMER* / CLIENT

PAOLO ASTORI SRL
VIA GEOLA, 34
28013 MAGGIATE SUPERIORE (NO)
(ITALIA)

-2184

PAOLO ASTORI SRL
-2184
RAW MATERIAL LOT

PEDIDO Nº / *ORDER Nr.* / COMMANDE Nº	10099
REF. / *REF.* / REF.	36.004
CERTIFICADO Nº / *CERTIFICATE Nr.* / RELEVÉ Nº	32.790
HOJA RUTA Nº / *BATCH Nr.* / LOT FABRICATION Nº	24.071
ALBARAN Nº / *DISPACHT Nr.* / LIVRAISON Nº	81.713
FECHA / *DATE* / DATE	28/07/2008

MATERIAL / *GRADE* / NUANCE	PESO/*WEIGHT*/POIDS	BULTOS/*BUNDLES*/COLIS
C.S.S. 0.67X 35 C45E / SAE1042	4.261.00	5

COMPOSICION QUIMICA / *CHEMICAL COMPOSITION* / COMPOSITION CHIMIQUE

COLADA Nº *CAST Nr.* COULÉE Nº	C	Mn	Si	S	P	Al	Cr			
61762	0.456	0.670	0.210	0.002	0.014	0.019	0.240			

CARACTERISTICAS MECANICAS / *MECHANICAL CHARACTERISTICS* / CARACTÉRISTIQUES MÉCANIQUES

ROLLO Nº *COIL No.* BOBINE Nº	Rm N/mm²	Re N/mm²	% A.	L_0	DUREZA *HARDNESS* DURETE	ESCALA	EMB. mm. *DRAWING mm.* EMB. mm.	DOBLADO *BENDING* PLIÉ
24060-2	504	345	25.12	80	79/79	HRB		180T

CERTIFICAMOS QUE LOS PRODUCTOS SUMINISTRADOS SON CONFORMES CON LOS REQUERIMIENTOS DEL PEDIDO Y SE HAN FABRICADO, INSPECCIONADO Y ENSAYADO DE ACUERDO A NUESTRO SISTEMA DE CALIDAD APROBADO SEGUN EN ISO 9001:2000.

WE CERTIFY THAT THE DELIVERED MATERIAL COMPLIES WHITH THE TERMS OF THE ORDER AND HAVE BEEN MANUFACTURED, INSPECTED AND TESTED IN ACCORDANCE WITH OUR QUALITY SYSTEM APPROVAL TO EN ISO 9001:2000.

NOUS CERTIFIONS QUE LES PRODUITS LIVRÉS SON CONFORMES AUX TERMES DE LA COMMANDE ET QU'ILS ONT ETÉ FABRIQUÉS, VERIFIÉS ET ESSAYÉS EN ACCORD AVEC NOTRE SYSTÉME DE QUALITÉ APROUVÉ SELON EN ISO 9001:2000

FECHA Y NOMBRE DEL TECNICO AUTORIZADO
DATE AND NAME OF AUTHORISED TECHNICIAN
DATE ET NOM DU TECHNICIEN AUTORISÉ

LUIS ALVAREZ

EL PRESENTE CERTIFICADO HA SIDO GENERADO ELECTRONICAMENTE Y ES VALIDO SIN FIRMAR S/ EN 10.204, SECCIÓN 5
THIS CERTIFICATE WAS PREPARED BY A SUITABLE DATA PROCESSING SYSTEM AND IS VALID WITHOUT SIGNATURE ACC. TO EN 10.204 SECTION 5
CET CERTIFICAT A ÉTÉ ÉTABLI PAR ORDENATEUR ET IL EST VALABLE SANS SIGNER SELON EN 10204 SECTION 5

B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
2	100	EA	AN4-16A		66197	MAC FASTENERS	0RFT4		

06/20/14

Jason Lewis
Vice President of Quality

Inv # 06/20/14

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

CERTIFICATE OF CONFORMANCE AND MANUFACTURER'S AFFIDAVIT

CUSTOMER: B/E AEROSPACE PO: 0LZZ07

PART NUMBER: AN4-16A REV: 2 LOT NUMBER: 66197

MANUFACTURED QUANTITY: 15,000 MILL HEAT NUMBER: 8193290

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 12/31/13

QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Regestered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER	PO NUMBER	MFG QUANTITY	DATE
B/E AEROSPACE	0LZZ07	15,000	12/31/13

PART NUMBER	REV	LOT NO	PROCUREMENT SPEC
AN4-16A	2	66197	NASM6812

MATERIAL	MATERIAL SPECIFICATION	MILL HEAT NUMBER	SUPPLIER
TYPE 8740	MIL-S-6049/AMS6322	8193290	JOHNSTOWN

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.40	.24	.77	.010	.010	.10	.52	.58	.26	.002			.023	
	Co	N	Bi	Pb	Mg	Zn		Nb	Sn			Other	
		.0060							.005				

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	DOUBLE SHEAR STRENGTH POUNDS / PSI
5,520	8,190
5,510	8,170
5,530	8,200
5,500	8,180
5,510	8,160
MIN. REQ. 4,080	MIN. REQ. 7,360

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS	29 - 30 HRC

METALLURGICAL EXAMINATION			
Discontinuities	☑	Carb/Decarb	☑
Grain Flow	☑	Microstructure	☑
Grain Size	☑	Apppearance	☑

Thread Inspection FED-STD-H28/20 - ASME B1.3 — System 21 ☐ System 22 ☑ System 23 ☐

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	☑
Liquid Penetrant Inspection per ASTM E1417	☐
Recess Torque Test	☐
Head Marking	☑
Magnetic Permeability ASTM A342 less than 2.0	☐

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION
FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE DATE: 12/31/13

PO NUMBER: 0LZZ07

MANUFACTURED QUANTITY: 15,000

PROCESSOR:

BODYCOTE MCLEAN - NADCAP ID 4464

LOT NUMBER: 66197 MATERIAL: TYPE 8740

PART NUMBER: AN4-16A REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC SAMPLE SIZE: 5

HARDNESS: 29 - 30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Regestered Company - SAI GLOBAL - 0058029

DE TRAY
Plating Works

Specialized Electro-Plating and Polishing
Nickel *Passivate*
Copper *Bright Dip*
Decorative Chrome *Strip Copper*
Satin Chrome *Descale*
Zinc
Cadmium

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

December 23, 2013

Mac Fasteners
1110 East Enterprise Street
Ottawa, Kansas 66067

Subject: Certification

This is to certify that the following parts have been cadmium plated per QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our Invoice#175513 dated 12/23/2013 for:

Lot#- 66197 P.N.- AN4-16A

James T. Pierson, Vice-President

DE TRAY PLATING WORKS

Johnstown Wire Technologies

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

TEST REPORT

WORK ORDER **800310**

LOT NUMBER **K-8193290**

SALES ORDER / RLS **002318 / 1**

SOLD TO

Mac Fasteners, Inc.
C/O TD Logistics Inc.
14505 W 100th Street
Lenexa, KS 66215
USA

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	COILS	LADING NO	SHIPMENT DATE
50516	8740-.2465	39,644 LBS	20	00119854	09/20/2013

SPECIFICATION **MacFast-87246**
AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS TS 95000 PSI Max Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spherodize Annealed In Process Heavy Phos & Light Lube Ctd
Size: .2465 +.0005 -.0005

CERTIFICATION REQUIREMENTS

Chemical

C	Mn	P	S	Si	Al	Ni	Cr	Mo	Cu	V
.40	.77	.010	.010	.24	.023	.52	.58	.26	.10	.002

Cb	Ti	N	Sn
.000	???????	.0060	.005

Physical

AMS 2301	J1	J10	J11	J12	J2	J3	J5	J4	J6	J7	J8	J9
0000	56	40	38	36	55	55	53	54	52	50	46	43

MacroClean E-381
111

Mechanical

TEST	UNITS	HIGH	LOW	AVERAGE
Tensile Str	Lbs/SqIn	86000	84000	85000
RA Per Cent	Percent	73.8	67.2	70.3
Decarb FFD	Inches	.000	.000	.000
Surface def. depth	Inches	.001	.001	.001

Rod / Melt Source

Rod Source	Melt Source	Country of Origin	Nafta
Republic	Republic	USA	Yes

End of Certification

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

Daniel J. Malik, Director of Quality Assurance

Republic steel 1807 EAST 28TH ST. PHONE: 330-438-5580 LORAIN, OH 44055 FAX: 330-438-5695

CERTIFICATE OF TESTS REPUBLIC STEEL 6/24/2013 2:46:00 PM

PURCHASE ORD: 84084
PART NUMBER: FXT40AA-.375
ORDER NUMBER: 1547434 - 01
HEAT: 8193290

PURCHASE ORDER DATE: 3/4/2013
ACCOUNT NUMBER: 5672-1921-01
SCHEDULE: 4927-93
REVISION: 1

CHARGE ADDRESS

JOHNSTOWN WIRE TECHNOLOGIES
124 LAUREL AVE
JOHNSTOWN, PA 15906

SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES
EDWARD ZAPOLA
C/O C & BL RAILROAD
TRACK 629
JOHNSTOWN, PA 15901

MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA 10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK & UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS

SIZE: RDS .3750 DIAM X COIL
RDS 9.5250MM DIAM X COIL

LADLE CHEMISTRY %

C	MN	P	S	SI	CU	NI	CR
0.40	0.77	0.010	0.010	0.24	0.10	0.52	0.58
V	MO	SN	AL	B	CB	N	
0.002	0.26	0.005	0.023	0.0000	0.000	0.0060	

CALCULATED TESTS

REDUCTION RATIO 1,177.6 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

SEMI - FINISHED RESULTS

JOMINY HARDNESS TEST SAE J406/ASTM A255

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30	32
56	55	55	54	53	52	50	46	43	40	38	36	36	34	33	32	31	30	30	29	29	29	28	28

MACRO ETCH TEST ASTM E381/MIL STD 430
ETCHANT: HCL TEMPERATURE: 170

	S	R	C
AVG	1	1	1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300

	IND FREQ	AVG FREQ	IND SEV	AVG SEV
PCE 03	0	0	0	0

FINISHED SIZE RESULTS

DECARBURIZATION TEST SAE J419/ASTM EI077/JIS G0558
ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE INCHES	COMPLETE INCHES	TOTAL DEPTH INCHES
PCE 6581	0.002	0	0.002

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

M T Kruth

Republic steel

1807 EAST 28TH ST.
PHONE: 330-438-5580

LORAIN, OH 44055
FAX: 330-438-5695

CERTIFICATE OF TESTS

REPUBLIC STEEL

6/24/2013
2:46:00 PM

PURCHASE ORD:	84084	PURCHASE ORDER DATE:	3/4/2013
PART NUMBER:	FXT40AA-.375	ACCOUNT NUMBER:	5672-1921-01
ORDER NUMBER:	1547434 - 01	SCHEDULE:	4927-93
HEAT:	8193290	REVISION:	1

CAPABLE OF SEAM DEPTH 1% MAX DIAMETER NOT LESS THAN .005 MAX

------------------------------ NOTES ------------------------------

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10186.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

------------------------------ NOTES (CONTINUED) ------------------------------

ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

------------------------------ SOURCE INFORMATION ------------------------------

MELT SOURCE: CANTON CAST ROLL   MELT COUNTRY: U.S.A   HOT ROLL SOURCE: LORAIN 9/10, U.S.A

MELT METHOD: EF BLOOM   RED. RATIO: 1177.6

-------------- END OF DATA -------------- CC -------------- END OF DATA --------------

WITH SHIPMENT	1 COPY	PRINTED AT SHIPPING AREA	
FAX SHIP TO	1 COPY	ATTENTION EDWARD ZAPOLA	1-814-532-5684
FILE	1 COPY		

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

M T Kruth

B/E Aerospace, Inc.
CONSUMABLES MANAGEMENT
P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
5	6	EA	AN893-3D		14787	HK FITTINGS/PERM BUR	0ABH9		

Jason Lewis
Vice President of Quality

06/20/14

Inv # 06/20/14

PALACE PLATING

ZINC, ANODIZING, CADMIUM, IRIDITING & PRIMING, PASSIVATION

710 E. 29th STREET • LOS ANGELES, CALIFORNIA 90011 • PHONE (323) 232-7263 • FAX (323) 232-3433

SOLD TO

H.K. Fittings
2979 North Ontario Street
Burbank Ca 91504-2017

SHIPPER NUMBE[R]

0096405

CUSTOMER ORDER NO.	TERMS	INVOICE DATE	REC. DATE
14787	NET 30 DAYS		04/12/0[illegible]

QUANTITY	DESCRIPTION	
~~2570~~ 2582 .000 EACH	*AN893-3D	Fitting (2024-T851 Alum)
	Blue Anodized per AMS-A-8625F Type II Class 2 Duplex Sealed	

HK FITTINGS

CUSTOMER Honeywell

CUSTOMER PURCHASE ORDER NO. C1774

PART NO. AN893-3D

CONTROL NO. 14787

SPC

4/19/01

WITNESS ____________________

SIGNED ____________________

CLIFFORD R. PIERCE, JR. - OWNER

HOUSE OF METALS INC.

New York ♦ Connecticut ♦ Illinois ♦ Nevada ♦ Florida ♦ California

Date	Cust. PO#	Cust. Part#	SO#	Fax No.
November 8, 2000	14787	AN893-3D	36354	818-841-1793

Bill To:
HK Fittings
2979 North Ontario Street
Burbank, CA 91504

ANALYSIS AND TESTS CERTIFICATE

Description Of Material And Specifications	#	Heat No.	Weight
1.000 HEX. AL. 2024-T851 X 12' PER SPEC. QQ-A-225/6E (18 BARS) (BARMARKED: AN, HK, D)	1.	DAM5C240004	228
1.000 HEX. AL. 2024-T851 X 12' PER SPEC. QQ-A-225/6E (6 BARS) (BARMARKED: HK, D)	2.	DAM5C240004	76
	3.		

CHEMICAL ANALYSIS

#	Pb	Si	Mn	Zn	Mg	Cu	Bi	Ni	Cr	Oe	Ot	Ti	Fe	Zr	Other
1.		.04	.63	.05	1.45	4.12			.008			.01	.09		
2.		.04	.63	.05	1.45	4.12			.008			.01	.09		
3.															

* ALUMINUM CONSTITUTES REMAINDER

MECHANICAL PROPERTIES

#	Tensile	Yield	Elong% In 2" or 4D	Red Of Area%	Hardness
1.	80.3 KSI	75 KSI	12.3		
2.	80.3 KSI	75 KSI	12.3		
3.					

HK FITTINGS
C/N 14787
P/N AN893/MS24392-3D
DATE 11-15-00
APPROVED HK 4

ELONGATION % MINIMUM IN 2 INCHES OR 4D UNLESS OTHERWISE SPECIFIED

WE CERTIFY THE ABOVE INFORMATION IS CORRECT AS CONTAINED IN THE RECORDS OF THE COMPANY.

Wendy Warner PHC

HONEYW 320

Test Report Clerk

B/E AEROSPACE

B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
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FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
1	50	EA	AN3-6		61368	MAC FASTENERS	0RFT4		

06/20/14

Jason Lewis
Vice President of Quality

Inv # 06/20/14

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

CERTIFICATE OF CONFORMANCE
AND
MANUFACTURER'S AFFIDAVIT

CUSTOMER: B/E AEROSPACE

PO: 0FTP79

PART NUMBER: AN3-6

REV: 2

LOT NUMBER: 61368

MANUFACTURED QUANTITY: 36,000

MILL HEAT NUMBER: 8192215

COUNTRY OF ORIGIN: UNITED STATES OF AMERICA

DFARS 252.225.7009 Compliant

MERCURY FREE CERTIFICATION

MacFasteners Inc. certifies that the parts referenced in the above lot number do not contain Mercury or Mercury compounds, and were manufactured in a Mercury free environment.

We certify that the parts furnished against the above referenced purchase order were manufactured by MAC FASTENERS, INC. within the United States, and were processed in accordance with all applicable drawings and specifications.

Objective evidence of compliance is on file, subject to examination upon request.

DATE: 09/20/13

QUALITY ASSURANCE REPRESENTATIVE

MacFasteners, Inc. is an AS9100C Regestered Company- SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 EAST ENTERPRISE
OTTAWA, KS 66067

CHEMICAL & PHYSICAL TEST REPORT

CUSTOMER	PO NUMBER	MFG QUANTITY	DATE
B/E AEROSPACE	0FTP79	36,000	09/20/13

PART NUMBER	REV	LOT NO	PROCUREMENT SPEC
AN3-6	2	61368	NASM6812

MATERIAL	MATERIAL SPECIFICATION	MILL HEAT NUMBER	SUPPLIER
TYPE 8740	MIL-S-6049/AMS6322	8192215	JOHNSTOWN

C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	B	Fe	Al	Ti
.41	.27	.82	.009	.014	.06	.42	.49	.22	.007			.0025	
	Co	**N**	**Bi**	**Pb**	**Mg**	**Zn**		**Nb**	**Sn**			**Other**	
		.0058							.004				

MECHANICAL TEST RESULTS - TESTING PER NASM1312

ULTIMATE TENSILE STRENGTH POUNDS	DOUBLE SHEAR STRENGTH POUNDS / PSI
3,150	4,870
3,160	4,860
3,150	4,880
3,170	4,870
3,150	4,860
MIN. REQ. 2,210	MIN. REQ. 4,250

HARDNESS	
ROCKWELL "C" SCALE	
REQ.	26 - 32 HRC
SAMPLE SIZE	5
ACTUAL RESULTS	28 - 30 HRC

NDT/ ADDITIONAL TESTS	
Magnetic Particle Inspection per ASTM E1444	☐
Liquid Penetrant Inspection per ASTM E1417	☐
Recess Torque Test	☐
Head Marking	☑
Magnetic Permeability ASTM A342 less than 2.0	☐

METALLURGICAL EXAMINATION			
Discontinuities	☑	Carb/Decarb	☑
Grain Flow	☑	Microstructure	☑
Grain Size	☑	Apppearance	☑
Thread Inspection FED-STD-H28/20 - ASME B1.3	System 21 ☐	System 22 ☑	System 23 ☐

TEST CERTIFICATION

WE CERTIFY THAT THE PART NUMBER, LOT NUMBER, AND SAMPLES REFERENCED ABOVE HAVE BEEN TESTED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATION
FOR THE TESTS REPORTED HEREIN. THIS CERTIFICATION SHALL NOT BE RE-PRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF MAC FASTENERS, INC.

Quality Assurance Representative

AS9100C REGISTERED
SAI GLOBAL - 0058029

MAC FASTENERS, INC.
1110 ENTERPRISE
OTTAWA, KANSAS 66067

HEAT TREAT CERTIFICATION

CUSTOMER: B/E AEROSPACE

DATE: 09/20/13

PO NUMBER: 0FTP79

MANUFACTURED QUANTITY: 36,000

PROCESSOR:

PAULO PRODUCTS KCMO - NADCAP ID 4679

LOT NUMBER: 61368

MATERIAL: TYPE 8740

PART NUMBER: AN3-6

REVISION: 2

REQUIRED HARDNESS: 26 - 32 HRC

SAMPLE SIZE: 5

HARDNESS: 28 - 30 HRC

HEAT TREAT SPECIFICATION AS APPLICABLE: MIL-H-6875/AMS-H-6875/AMS2759/AMS5853/PS-1001

Notes:

The fasteners referenced in this report have been processed, inspected and certified by the Heat Treat Contractor in accordance with all applicable drawings and specifications. Heat Treatment has been verified in accordance with procurement specification and part drawing, by metallurgical and mechanical testing as applicable. Evidence of compliance as well as certification from the Heat Treat Contractor is on file and subject to examination upon request.

QUALITY ASSURANCE REPRESENTATIVE

DE TRAY
Plating Works

Specialized Electro-Plating and Polishing

Nickel	*Passivate*
Copper	*Bright Dip*
Decorative Chrome	*Strip Copper*
Satin Chrome	*Descale*
Zinc	
Cadmium	

10405 EAST ELEVENTH STREET • INDEPENDENCE, MISSOURI 64052
Phone (816) 252-8411 Fax (816) 252-8527 • E-mail : DeTrayPlating@Aol.com

September 18, 2013

Mac Fasteners
1110 East Enterprise Street
Ottawa, Kansas 66067

Subject: Certification

This is to certify that the following parts have been cadmium plate per QQ-P-416/AMS-QQ-P-416/NAS4160/AMS2400, Type II, Class 2. Please reference our Invoice#173007 dated 9/18/2013 for:

Lot#- 61368 P.N.- AN3-6

James T. Pierson, Vice-President

James T. Pierson

DE TRAY PLATING WORKS

Johnstown Wire Technologies

124 Laurel Ave,
Johnstown, PA 15906

Phone: 814-532-5680
Fax: 814-532-5684

TEST REPORT

WORK ORDER 624902

LOT NUMBER K-8192215

SALES ORDER / RLS 000844 / 3

SOLD TO

Mac Fasteners, Inc.
C/O TD Logistics Inc.
14505 W 100th Street
Lenexa, KS 66215
USA

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	COILS	LADING NO	SHIPMENT DATE
50516		20,063 LBS	10	00116338	03/25/2013

SPECIFICATION MacFast-87186
AMS2301; AMS6322; AMS-S-6049A; MIL-S-6049A 8740 DFARS Defense Federal Acquisition Regulation Supplement Silicon Killed Fine Grain Aircraft Quality/Cold Heading Quality Drawn From Annealed Rod Spherodize Annealed In Process Heavy Phos & Light Lube Ctd
Size: .1865 +.001 -.000

CERTIFICATION REQUIREMENTS

Chemical

C	Mn	P	S	Si	Al	Ni	Cr	Mo	Cu	V
.41	.82	.009	.014	.27	.025	.42	.49	.22	.06	.007

Cb	Ti	N	Sn
.001	???????	.0058	.004

Physical

AMS 2301	J1	J10	J11	J12	J2	J3	J5	J4	J6	J7	J8	J9
0000	57	37	35	34	56	56	53	55	49	45	41	39

MacroClean E-381
111

Mechanical

TEST	UNITS	HIGH	LOW	AVERAGE
Tensile Str	Lbs/SqIn	82000	81000	82000
RA Per Cent	Percent	73.1	70.3	71.7
Decarb FFD	Inches	.000	.000	.000
Surface def. depth	Inches	.001	.001	.001

Rod / Melt Source

Rod Source	Melt Source	Country of Origin	Nafta
Republic	Republic	USA	Yes

End of Certification

I certify that the results are a true and correct copy of the records prepared and maintained by JOHNSTOWN WIRE TECHNOLOGIES in compliance with the requirements of the cited specification. Chemistry is as reported by the rod / bar supplier and is not in JWT A2LA accreditation. This test report cannot be reproduced or distributed except in full without the written permission of JOHNSTOWN WIRE TECHNOLOGIES. The test results certified herein relate only to the items tested.

Daniel J. Malik, Director of Quality Assurance

S-2

Date Printed 03/26/2013

Republic steel

1807 EAST 28TH ST. LORAIN, OH 44055
PHONE: 330-438-5800 FAX: 330-438-5699

CERTIFICATE OF TESTS

REPUBLIC STEEL

PURCHASE ORD:	83162	PURCHASE ORDER DATE:	10/2/2012
PART NUMBER:	FXT40AA-.375	ACCOUNT NUMBER:	5672-1920-01
ORDER NUMBER:	1532905 - 01	SCHEDULE:	6519-92
HEAT:	8192215	REVISION:	1

CHARGE ADDRESS

JOHNSTOWN WIRE TECHNOLOGIES
124 LAUREL AVE
JOHNSTOWN, PA 15906

SHIP TO

JOHNSTOWN WIRE TECHNOLOGIES
EDWARD ZAPOLA
124 LAUREL AVE
TRUCK STPO 9 ROD DOCK
JOHNSTOWN, PA 15904

MATERIAL DESCRIPTION

HOT ROLLED STEEL COILS ALLOY AMS 2301K JOHNSTOWN WIRE SPEC RW-100 REVISION DTD 04/21/04 EXC PARA 10.3 AMS 6322N EXC HARD JOHNSTOWN WIRE SPEC RW-005 REVISION DTD 12/31/00 EXC SURFACE DEFECTS JOHNSTOWN WIRE SPEC PART NO. FXT40AA REVISION DTD 12/31/00 MIL S 6049A & AMD 1 COND B-1 EXC MARK & UT WAIVED EF-AISI-8740-H FINE GRAIN VACUUM DEGASSED AIRCRAFT QUALITY FIXED PRACTICE QUALITY RESTRICTED CHEMISTRY RESTRICTED MAX INCIDENTAL ELEMENTS

SIZE: RDS .3750 DIAM X COIL
RDS 9.5250MM DIAM X COIL

LADLE CHEMISTRY %

C	MN	P	S	SI	CU	NI	CR
0.41	0.82	0.009	0.014	0.27	0.06	0.42	0.49
V	**MO**	**SN**	**AL**	**B**	**CB**	**N**	
0.007	0.22	0.004	0.025	0.0001	0.001	0.0058	

CALCULATED TESTS

REDUCTION RATIO 1,177.6 TO 1

AUSTENITIC GRAIN SIZE 5 OR FINER BASED ON A TOTAL ALUMINUM CONTENT EQUAL TO OR GREATER THAN .020% PER ASTM A29.

SEMI - FINISHED RESULTS

JOMINY HARDNESS TEST SAE J406/ASTM A255

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	26	28	30	32
57	56	56	55	53	49	45	41	39	37	35	34	34	32	30	31	30	30	29	29	29	28	28	28

MACRO ETCH TEST ASTM E381/MIL STD 430
ETCHANT: HCL TEMPERATURE: 170

	S	R	C
AVG	1	1	1

MAGNETIC PARTICLE TEST AMS 2301 AMS2304 AMS2300

	IND FREQ	AVG FREQ	IND SEV	AVG SEV
PCE 03	0	0	0	0

FINISHED SIZE RESULTS

DECARBURIZATION TEST SAE J419/ASTM E1077/JIS G0558
ETCHANT = NITAL MAGNIFICATION = 100X

	SPIKE INCHES	COMPLETE INCHES	TOTAL DEPTH INCHES
PCE 15115	0.002	0	0.002

CAPABLE OF SEAM DEPTH 1% MAX DIAMETER NOT LESS THAN .005 MAX

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

M T Kruth

Republic steel 1807 EAST 28TH ST. LORAIN, OH 44055
PHONE: 330-[illegible] FAX: 330-[illegible]

CERTIFICATE OF TESTS REPUBLIC STEEL 11/29/2012 9:10:00 AM

PURCHASE ORD:	83162	PURCHASE ORDER DATE:	10/2/2012
PART NUMBER:	FXT40AA-.375	ACCOUNT NUMBER:	5672-1920-01
ORDER NUMBER:	1532905 - 01	SCHEDULE:	6519-92
HEAT:	8192215	REVISION:	1

-- NOTES --

CHEMICAL ANALYSIS CONFORMS TO APPLICABLE SPECS: ASTM E415, LBL10129, LBL10130, ASTM E1019, LBL10158, LBL10114, AND ASTM E1085, LBL10184, LBL10188.

REPUBLIC STEEL HEREBY CERTIFIES THAT THE MATERIAL LISTED HEREIN HAS BEEN INSPECTED AND TESTED IN

-- NOTES (CONTINUED) --

ACCORDANCE WITH THE METHODS PRESCRIBED IN THE GOVERNING SPECIFICATIONS AND BASED UPON THE RESULTS OF SUCH INSPECTION AND TESTING HAS BEEN APPROVED FOR CONFORMANCE TO THE SPECIFICATIONS.

CERTIFICATE OF TESTS SHALL NOT BE REPRODUCED EXCEPT IN FULL.

ALL TESTING HAS BEEN PERFORMED USING THE CURRENT REVISION OF THE TESTING SPECIFICATIONS.

RECORDING OF FALSE, FICTITIOUS OR FRAUDULENT STATEMENTS OR ENTRIES ON THIS DOCUMENT MAY BE PUNISHED AS A FELONY UNDER FED STATUTES TITLE 18 CHAPTER 47.

THE MATERIAL WAS NOT EXPOSED TO MERCURY OR ANY METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURE DURING PROCESSING OR WHILE IN OUR POSSESSION.

NO WELD OR WELD REPAIR WAS PERFORMED ON THIS MATERIAL.

THE RESULTS REPORTED RELATE ONLY TO THE ITEMS TESTED.

-- SOURCE INFORMATION --

MELT SOURCE: CANTON CAST ROLL MELT COUNTRY: U.S.A HOT ROLL SOURCE: LORAIN 9/10, U.S.A
MELT METHOD: EF BLOOM RED. RATIO: 1177.6

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FILE	1 COPY		

G. KRUTH
DIRECTOR QUALITY ASSURANCE

BY DEBORAH STOKES

M T Kruth

B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
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FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
7	5	EA	AT283-14		132236C	ABBOTEC INC.	0A554		

06/20/14

Jason Lewis
Vice President of Quality

Inv # 06/20/14

ABBOTEC INCORPORATED
101 CANYON COURT
WEATHERFORD, TX 76087
817-441-1570 Fax 817-441-2460

CUSTOMER: B/E AEROSPACE
PO# 0KML57
COUNTRY OF ORIGIN U.S.A.

DATE 09/28/12
LOT# 132236C
PACKING SLIP# A33379

ITEM	PART NUMBER	QUANTITY
NUT PLATE	AT283-14	500

We hereby certify that the material supplied on this order is in compliance with the specifications and/or drawings referenced on the order indicated above. Documented evidence is on file and is available for review upon request.

We certify that chemical and/or physical test reports or other evidence of conformance to applicable specification covering all materials in the above parts are on file subject to examination where reports are requested.

Claims for adjustments due to rejects, quantity, discrepancies, etc., must be made within 30 days after the receipt of material. Claims made after that period will not be accepted.

Patty Ellis
Authorized Signature
PATTY ELLIS
GENERAL MANAGER

MERCURY FREE COMPLIANT
ROHS COMPLIANT
DFARS COMPLIANT (252.225-7009)
MFR: ABBOTEC CAGE CODE: OA554

B/E AEROSPACE

B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
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www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

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FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	MFR DATE	EXP DATE
6	6	EA	AN924-12J		F00028936-33486	DESIGNED METAL DBA P	14798		

06/20/14

Jason Lewis
Vice President of Quality

Inv # 06/20/14

PERMASWAGE

PERMASWAGE - Nelson Aerospace
A Designed Metal Connections, Inc. Company
10310 Norris Avenue
Pacoima, CA 91331
Ph: 818-686-0900
Fax: 818-686-0181

Pack Slip: 54494

Sales Order: 29694

Customer Packing Slip

Ship To:	**Sold To:**
B/E AEROSPACE CONSUMABLES MANAGEME 9835 NW 14TH ST MIAMI FL 33172 USA	B/E AEROSPACE CONSUMABLES MANAG 10000 NW 15TH TERRACE MIAMI FL 33172-2756 USA
Verify AES requirements prior to shipment.	**Verify AES requirements prior to shipment.** **Fax:** 305-507-7192

Ship Date: 3/21/2014 Ship Via: FEDEX GROUND F.O.B.: EX WORKS
Cust P.O.: 0RKB07 Salesperson: JIM THOMPSON

FEDEX GRD # 0331-0149-0

RELEASE # G5GS0RKB07

2,500	2,050	AN924-12J NUT	12	F00028936-33486

Sale Order / Line / Release: 29694 / 3 / 1 Customer PO Number: 0RKB07

Certificates Required:

Standard Certification:	No	First Article Inspection:	No	Material Certificate:	No
Full Certifications:	Yes	Chemical/Physical:	No	FAIR per AS9102:	No

Product is compliant to DFAR 252.225-7009

DUAL CERTIFIED TO AN924-12C

1 BOX - 10X10X10 - 24 LBS
6 BOXES- 10X10X10 - 28 LBS EA

AN, MS, AS, NAS and other industry standard parts controlled by ECCN 9A991 and HTS 8803.30.00.00
Products listed have not been exposed to mercury or mercury compounds during the manfuacturing process.
!! MATERIAL TO BE RETURNED MUST HAVE PRIOR AUTHORIZATION BY PERMASWAGE -NELSON AEROSPACE SALES @ 818-686-0900 !!

WE HERBY CERTIFY THAT ALL PROVISIONS OF THE FAIR LABOR STARNDARDS ACT ON 6/25/83 AS AMENDED HAVE BEEN FULLY COMPLIED WITH IN THE MANUFACTURE, PRODUCTION OR PURCHASE OF GOODS LISTED HEREON. ALL ITEMS ARE SUBJECT TO A 100% RESTOCKING CHARGE. ALL PAST DUE ACCOUNTS SHALL BEAR INTEREST AT THE RATE OF 11/2% PER MONTH (18% PER ANNUM).

Certification of COnformance

NELSON AEROSPACE WARRANTS THAT THE ITEMS OF THIS SHIPPER WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP AND, AS SET FORTH ON THE MATERIAL CERTIFICATION FORM, ACCOMPANYING THE ITEMS OF THIS INVOICE, ARE IN CONFORMITY WITH CONTRACT REQUIREMENTS AND SPECIFICATIONS, GOVERNMENT OR OTHERWISE. NELSON AEROSPACE DISCLAIMS ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND OF THE FITNESS FOR A PARTICULAR PURPOSE. THE LIABILITY OF NELSON AEROSPACE IS EXPRESSLY LIMITED TO REPLACEMENT OF ANY ITEM WHICH IS REJECTED BECAUSE OF A DEFECT IN MATERIAL OR WORKMANSHIP. SUCH REPLACEMENT SHALL CONSTITUTE SATISFACTION OF ALL LIABLITY NELSON AEROSPACE MAY HAVE IN CONNECTION WITH SUCH ITEM, WHETHER LIABLTY IS BASED UPON CONTRACT RIGHTS, NEGLANCE OR OTHERWISE, AND IN NO EVENT SHALL NELSON AEROSPACE BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMANGES. FURTHER, NELSON AEROSPACE MUST BE NOTIFIED OF A REJECTION OF AN ITEM WITHIN 30 DAYS AFTER RECIEPT BY THE CUSTOMER.

Country of Origin: MADE IN THE USA

BY RECEIVING DELIVERY OF THE GOODS COVERED BY THIS PACKING SLIP, BUYER EXPRESSLY ASSENTS TO THE TERMS AND CONDITIONS SET FORTH.

Manager of Quality Assurance or Designee

Reid Metal Finishing
3110 West Harvard
Santa Ana, CA 92704
Phone: (714) 549-3771
Fax: (714) 549-3008

CERTIFICATION

P/L # 93470
03/18/2014

SOLD TO:
PERMASWAGE-NELSON AEROSPACE
10310 NORRIS AVE
PACOIMA, CA 91331

SHIP TO:
PERMASWAGE-NELSON AEROSPACE
10310 NORRIS AVE
PACOIMA CA 91331

Ship: Cust. Pickup

Net 45

UNITS SHIPPED	PART #	DESCRIPTION	PO #	RMF #	REF #
3,792 *qty.*	AN924-12J	NUT	35829	95278	24398
0 *B/O*	370.00 *lbs.*				

24 HOUR WATER IMMERSION TEST / IAW AMS2700E, METHOD 1, TYPE 6, CLASS 1 / LOT NO. F00028936-33486

WE HEREBY CERTIFY COMPLIANCE TO THE BELOW REFERENCED PROCESS SPECIFICATION(S)

Passivate Method 1 Type 6 (Nitric 2)
REF: AMS 2700 (ASTM A967/A967M)

Color:
Rev: E (13)

NA
125

Q.C. MANAGER: Julio Quijos

Nadcap

Processes are performed by RMF in accordance with the latest revisions or superseding specifications. This certification also meets the requirements for designs and drawings developed under older revisions and/or non-current specifications. An Electrode Technologies, Inc., Company.

B/E Aerospace, Inc.

CONSUMABLES MANAGEMENT

P.O. Box 025263, Miami, FL 33102-5263 • Tel: 305.925.2600 • Fax: 305.507.7191
Plant Location: 10000 N.W. 15th Terrace, Miami, FL 33172 • SITA: MIAMMCR
www.beconsumables.com

Shipped From: 10000 NW 15 TERRACE, MIAMI, FL 33172

Material Certification

The items set forth on the purchase order referred to below have been visually inspected and the dimensions thereof have been measured by us, and based on the aforesaid, as well as the representation made to us by the manufacturers of the items subject of such purchase order, we hereby certify that such items are in conformity with all current governmental and manufacturer's requirements, specifications, drawings, and conform to the purchase order requirements. Said items are in new condition and have not been obtained from any U.S. Government or Military source and are traceable to B/E Aerospace, Inc.

FIRM: DART AEROSPACE LTD

PURCHASE ORDER#: PO24706

LNE#	QUANTITY	U/M	PART-NUMBER	CUST REF#	LOT-NUMBER	MANUFACTURER	CCODE	CURE DATE	EXP DATE
8	50	EA	MS35489-46		60743	MINOR RUBBER	76385	10/01/13	12/31/16

06/20/14

Jason Lewis
Vice President of Quality

Inv # 06/20/14

CLAIMS FOR DAMAGES OR SHORTAGES MUST BE MADE WITHIN 30 DAYS OF RECEIPT OF MERCHANDISE.

SALES ORDER - SID	CUSTOMER PURCHASE ORDER NUMBER	ORDER DATE	PROCESS DATE	CORR CODE	TERR	TAX	SHIP	PACK CODE	PTM INSTRUCTIONS
186124001	344135-00	06/26/13	06/26/13	KB	46		C		

Sold To: 934736
KAPCO VALTEC INC
P O BOX 747
IVORYTON, CT 06442

Ship To: B
KAPCO
KIRKHILL AIRCRAFT PARTS CO.
3120 E. ENTERPRISE ST.
BREA, CA 92821 - USA

Parker

Parker Hannifin Corporation
Composite Sealing Systems Division
7664 Panasonic Way
San Diego, CA 92154
Telephone: (619) 661-7000
DUNS #00-837-0645

MADE IN MEXICO

Special Instructions: PR# 00
MANUFACTURING CERTS
ALL LOTS TO BE SEGRETATED BY HEAT LOT AND BATCH #
MULTIPLE HEAT LOT AND BATCH #S MAY NOT BE MIXED
ADD COUNTRY OF ORIGIN TO C OF C
BARCODE LABEL REQUIREMENT ON ALL SHIPMENTS TO KAPCO

NAME: DANA DOW PHONE:
ADD MFG CERTS TO SO & CURE DATE MUST NOT EXCEED 12 QUARTERS
ADD NOTE TO SO: BARCODES & LABELS PER HONEYWELL QAP 33.0

BILL OF LADING NO.	IF APPLICABLE, ALTERNATE CARRIER	DEFAULT CARRIER CODE
		FEDX GROUND #090022016

687887186124001

ITEM	ORIGINAL QTY	REFERENCED PART NUMBER	PROD CODE	QTY THIS SHIPMENT	PCO*	QTY B/O	COMPOUND	BATCH	CURE DATE
01	1000	MS27194-16 REV D	205	1000		0	N602-70	80202819 (150 pcs) 80203242 (850 pcs)	2Q13
0001		MS27194-16 IND. PACKAGING 06/26/13 06/28/13							

DESCRIPTION: SEAL
NOTE DESCRIPTION: MESSAGE
B/E AEROSPACE,INC-CONSUMABLES MANAGEMENT QUALITY
CLAUSES PER QAP 33.0 02/21/13: ABCDHPUV
GENERAL NOTES:
PRODUCT IS BEING PROCURED BASED UPON A
LICENSING AGREEMENT BETWEEN B/E AEROSPACE,INC-CONSUMABLES MANAGEMENT
AND KAPCO FOR HONEYWELL PROPRIETARY PRODUCTS.
THE ABOVE LINE ITEM(S) WILL MEET THE REQUIREMENTS OF B/E AEROSPACE,
F1B-7 1000 2Q13

KAPCO ICN 341216-01 (KAPCO 14 RI)

THIS IS A COPY OF THE ORIGINAL CERTIFICATION AS DELIVERED TO KAPCO

CONFORMANCE CERTIFICATE FOR SHIPPED MATERIAL
PARKER HANNIFIN CORPORATION, O-SEAL DIVISION

BY Laura Jaramillo
QUALITY ASSURANCE REPRESENTATIVE

The Parker Hannifin Corporation hereby certifies that all materials used in the manufacture of parts called for on this purchase order, conform to the material specifications indicated in drawings or specifications called for. Test reports on file with us or with our suppliers for examination and indicate conformance with applicable specification requirements. The Parker Hannifin Corporation also certifies that the parts are manufactured in accordance with the material specifications called for on this order that are current on the date on which the order was accepted.

Notice to Subsequent Purchaser or Repacker.
These articles could be imported and you are required to meet the requirements of 19 U.S.C. 1304 and 19 CFR part 134 provide that the articles or their containers must be marked in a conspicuous place as legibly, indelibly and permanently as the nature of the article or container will permit, in such a manner as to indicate to an ultimate purchaser in the United States, the English name of the country of origin of the article.

WARNING: THIS PRODUCT MAY CONTAIN CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM. THIS WARNING IS GIVEN IN COMPLIANCE WITH CALIFORNIA PROPOSITION 65. AS DETECTABLE AMOUNTS OF CHEMICALS SUBJECT TO PROPOSITION 65 MAY BE CONTAINED IN THIS PRODUCT.

*SHIP LEGEND: P - PARTIAL C - COMPLETE O - OVERSHIPPED

CERTIFICATE OF CONFORMANCE OSLSS1 CSOSH205

PARKER COMPOSITE SEALING SYSTEMS

Calle 7 Norte # 111Ciudad Industrial. Tijuana,BC Mexico 22500
Please forward any certification questions or concerns to CSS.BajaCerts@parker.com

CERTIFICATION OF CONFORMANCE

To: KAPCO
KIRKHILL AIRCRAFT PARTS CO.
3120 E. ENTERPRISE ST.
BREA CA 92821

Attention: Quality Control Department

Date: June 26, 2013
Customer P/N: MS27194-16
Parker Seal P/N: MS27194-16 REV.D
Quantity: 850
P.O. Number: 344135-00
Shipper No.: 186124001

The material and/or part furnished on this shipment were produced in accordance with all applicable specifications required by the referenced purchase order, as listed below:

Material		Specification Number
MS27194-16 PER:		AS27194
6061-T6 ALUMINUM	HEAT LOT# 656495	AMS-4027N
COMPOUND N602-70		AMS-P-5315 REV.A
BATCH# 80203242		
CURE DATE 2Q13		

Processing	Specification No.	Name of Processor
ANODIZE (PO# 54144)	MIL-A-8625F1 , TYPE II, CL.2	BARRY AVENUE PLATING CO. INC.

Material test reports, material certifications, or process certifications covering the above listing

A. [x] are attached as required by purchase order

B. [ ] are on file and available for examination

KAPCO ICN (KAPCO 14 RI)

THIS IS A COPY OF THE ORIGINAL CERTIFICATION AS DELIVERED TO KAPCO 341216-01

PARKER HANNIFIN CORPORATION
CSS Division

By Laura Jaramillo
LAURA JARAMILLO
QUALITY REPRESENTATIVE

CLAIMS FOR DAMAGES OR SHORTAGES MUST BE MADE WITHIN 30 DAYS OF RECEIPT OF MERCHANDISE.

SALES ORDER - SID	CUSTOMER PURCHASE ORDER NUMBER	ORDER DATE	PROCESS DATE	CORR CODE	TERR	TAX	SHIP	PACK CODE	PTM INSTRUCTIONS
182482001	330114-00	02/22/13	02/22/13	KB	46		C		

Sold To: 934736
KAPCO VALTEC INC
P O BOX 747
IVORYTON, CT 06442

Ship To: B
KAPCO
KIRKHILL AIRCRAFT PARTS CO.
3120 E. ENTERPRISE ST.
BREA, CA 92821 - USA

Parker

Parker Hannifin Corporation
Composite Sealing Systems Division
7664 Panasonic Way
San Diego, CA 92154
Telephone: (619) 661-7000
DUNS #00-837-0645

Special Instructions:
MANUFACTURING CERTS
ALL LOTS TO BE SEGRETATED BY HEAT LOT AND BATCH #
MULTIPLE HEAT LOT AND BATCH #S MAY NOT BE MIXED
ADD COUNTRY OF ORIGIN TO C OF C
BARCODE LABEL REQUIREMENT ON ALL SHIPMENTS TO KAPCO

PR# 00

NAME: DANA DOW PHONE:
CURE DATE MUST NOT EXCEED 12 QUARTERS
BARCODES & LABELS PER HONEYWELL QAP 33.0

THIS IS A COPY OF THE ORIGINAL CERTIFICATION AS DELIVERED TO KAPCO

MADE IN MEXICO

BILL OF LADING NO.	IF APPLICABLE, ALTERNATE CARRIER	DEFAULT CARRIER CODE
		FEDX GROUND #090022016

687887182482001

ITEM	ORIGINAL QTY	REFERENCED PART NUMBER	PROD CODE	QTY THIS SHIPMENT	PCO*	QTY B/O	COMPOUND	BATCH	CURE DATE
01	500	MS27194-16 REV D	205	490		0	N602-70	80199313 399 pcs 80199313 91 pcs	1Q13 1Q13
0001		MS27194-16 REV N/C IND. PACKAGING 02/25/13 03/01/13							

DESCRIPTION: SEAL "N/C"
NOTE DESCRIPTION: MESSAGE
B/E AEROSPACE,INC-CONSUMABLES MANAGEMENT QUALITY
CLAUSES PER QAP 33.0 08/08/12: ABCDHPUV
GENERAL NOTES:
PRODUCT IS BEING PROCURED BASED UPON A
LICENSING AGREEMENT BETWEEN B/E AEROSPACE,INC-CONSUMABLES MANAGEMENT
AND KAPCO FOR HONEYWELL PROPRIETARY PRODUCTS.
THE ABOVE LINE ITEM(S) WILL MEET THE REQUIREMENTS OF B/E AEROSPACE,
F1B-5 490 1Q13

KAPCO ICN 328318-01

KAPCO 15 RI

CONFORMANCE CERTIFICATE FOR SHIPPED MATERIAL
PARKER HANNIFIN CORPORATION, O-SEAL DIVISION

BY ____________
QUALITY ASSURANCE REPRESENTATIVE

The Parker Hannifin Corporation hereby certifies that all materials used in the manufacture of parts called for on this purchase order, conform to the material specifications indicated in drawings or specifications called for. Test reports on file with us or with our suppliers for examination and indicate conformance with applicable specification requirements. The Parker Hannifin Corporation also certifies that the parts are manufactured in accordance with the material specifications called for on this order that are current on the date on which the order was accepted.

Notice to Subsequent Purchaser or Repacker.
These articles could be imported and you are required to meet the requirements of 19 U.S.C. 1304 and 19 CFR part 134 provide that the articles or their containers must be marked in a conspicuous place as legibly, indelibly and permanently as the nature of the article or container will permit, in such a manner as to indicate to an ultimate purchaser in the United States, the English name of the country of origin of the article.

WARNING: THIS PRODUCT MAY CONTAIN CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM. THIS WARNING IS GIVEN IN COMPLIANCE WITH CALIFORNIA PROPOSITION 65. AS DETECTABLE AMOUNTS OF CHEMICALS SUBJECT TO PROPOSITION 65 MAY BE CONTAINED IN THIS PRODUCT.

***SHIP LEGEND: P - PARTIAL C - COMPLETE O - OVERSHIPPED**

CERTIFICATE OF CONFORMANCE

OSLSS1 CSOSH205

PARKER COMPOSITE SEALING SYSTEMS

Calle 7 Norte # 111Ciudad Industrial. Tijuana,BC Mexico 22500
Please forward any certification questions or concerns to CSS.BajaCerts@parker.com

CERTIFICATION OF CONFORMANCE

To: KAPCO
3120 E. ENTERPRISE ST.
BREA CA 92821

Attention: Quality Control Department

Date: February 25, 2013
Customer P/N MS27194-16 REV. N/C
Parker Seal P/N MS27194-16 REV. D
Quantity 399
P.O. Number 330114-00
Shipper No. 182482001

The material and/or part furnished on this shipment were produced in accordance with all applicable specifications required by the referenced purchase order, as listed below:

Material		Specification Number
MS27194 PER		AS27194
AL 6061-T6	HEAT LOT# 619793	AMS 4027N
COMPOUND N602-70		AMS-P-5315A
BATCH# 80199313		
CURE DATE 1Q13		

Processing	Specification No.	Name of Processor
ANODIZE (MO#BU011313)	MIL-A-8625F1 , TYPE II , CLASS I	BARRY AVENUE PLATING CO , INC.

Material test reports, material certifications, or process certifications covering the above listing

A. [x] are attached as required by purchase order

B. [ ] are on file and available for examination

KAPCO ICN

328318-01

Class I Ozone Depleting Substances are not used such that they are released into the environment or contained in our products when performing the design, test, manufacture.
handling, transportation, operations, maintenance or disposal of this product delivered to this order.

PARKER HANNIFIN CORPORATION
CSS Division

By ____________________
OMAR DE LEON
QUALITY REPRESENTATIVE

KAPCO 15 RI

THIS IS A COPY OF THE ORIGINAL CERTIFICATION AS DELIVERED TO KAPCO